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<213> Homo sapiens

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Tyr Phe Pro Val Gly Pro Gly Thr Gly Phe Leu Tyr Leu Val Asn 75

Leu Tyr Phe Leu Tyr Arg Phe Gln Tyr Ser Thr Arg Leu Glu Thr Gly Ala 80

Phe Asp Gly Arg Pro Ala Asp Tyr Leu Phe Met Leu Leu Phe Asn 105

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Leu Met Ile Pro Leu Ile Met Ser Val Leu Tyr Val Trp Ala Gln
Leu Asn Arg Asp Met Ile Val Ser Phe Trp Phe Gly Thr Arg Phe
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Lys Ala Cys Tyr Leu Pro Trp Val Ile Leu Gly Phe Asn Tyr Ile
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Ile Gly Gly Ser Val Ile Asn Glu Leu Ile Gly Asn Leu Val Gly
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                                    175
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His Leu Tyr Phe Phe Leu Met Phe Arg Tyr Pro Met Asp Leu Gly
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                                    190
Gly Arg Asn Phe Leu Ser Thr Pro Gln Phe Leu Tyr Arg Trp Leu
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Pro Ser Arg Arg Gly Gly Val Ser Gly Phe Gly Val Pro Pro Ala
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<213> Homo sapiens

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Glu Glu Glu Arg Lys Arg Lys Gln Leu Ser Glu Ala Lys Thr
Glu Glu Pro Thr Val His Ser Ser Glu Ala Ala Ile Met Asn Asn
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                                    220
Ser Gln Gly Asp Gly Glu His Phe Ala His Pro Pro Ser Glu Val
                                    235
Lys Met His Phe Ala Asn Gln Ser Ile Glu Pro Leu Gly Arg Lys
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Val Glu Arg Ser Glu Thr Ser Ser Leu Pro Gln Lys Gly Leu Lys
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Ile Pro Gly Leu Glu His Ala Ser Ile Glu Gly Pro Ile Ala Asn
Leu Ser Val Leu Gly Thr Glu Glu Leu Arg Gln Arg Glu His Tyr
Leu Lys Gln Lys Arg Asp Lys Leu Met Ser Met Arg Lys Asp Met
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Arg Thr Lys Gln Ile Gln Asn Met Glu Gln Lys Gly Lys Pro Thr
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115

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ctggcagtgg ttcttgaccc ggtttggcaa gaagacagct gtatatgttg 1250

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<211> 458

<212> PRT

<213> Homo sapiens

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Ala Ser Ala Asn Pro Pro Gly Pro Ala Trp Val Ala Leu Cys Pro 35 40 45

Gly Ser Ser Ser Pro Arg Pro Trp Pro Ser Leu Pro Thr Ser Ser 50 55 60

Ser Gly Ser Cys Pro Thr Ser His Thr Ala Arg Pro Ile Gly Thr
65 70 75

Cys Phe Ser Ile Ala Ser Leu Lys Gln Trp Ser Arg Val Ser Met 80 85 90

Phe Pro Thr Arg Leu Ser Pro Cys Ser Ser Ala Thr Glu Gln Thr 95 100 105

Glu Arg Asp Ser Ala Thr Ala Tyr Arg Met Thr Val Glu Val Leu Gly Thr Val Leu Gly Thr Ala Ile Gln Gly Gln Ile Val Gly Gln Ala Asp Thr Pro Cys Phe Gln Asp Phe Asn Ser Ser Thr Val Ala Ser Gln Ser Ala Asn His Thr His Gly Thr Thr Ser His Arg Glu 155 Thr Gln Lys Ala Tyr Leu Leu Ala Ala Gly Val Ile Val Cys Ile 170 Tyr Ile Ile Cys Ala Val Ile Leu Ile Leu Gly Val Arg Glu Gln Arg Glu Pro Tyr Glu Ala Gln Gln Ser Glu Pro Ile Ala Tyr Phe 210 Arg Gly Leu Arg Leu Val Met Ser His Gly Pro Tyr Ile Lys Leu 215 220 Ile Thr Gly Phe Leu Phe Thr Ser Leu Ala Phe Met Leu Val Glu 230 Gly Asn Phe Val Leu Phe Cys Thr Tyr Thr Leu Gly Phe Arg Asn 255 250 Glu Phe Gln Asn Leu Leu Leu Ala Ile Met Leu Ser Ala Thr Leu 260 Thr Ile Pro Ile Trp Gln Trp Phe Leu Thr Arg Phe Gly Lys Lys 280 Thr Ala Val Tyr Val Gly Ile Ser Ser Ala Val Pro Phe Leu Ile 300 Leu Val Ala Leu Met Glu Ser Asn Leu Ile Ile Thr Tyr Ala Val 310 305 Ala Val Ala Ala Gly Ile Ser Val Ala Ala Ala Phe Leu Leu Pro Trp Ser Met Leu Pro Asp Val Ile Asp Asp Phe His Leu Lys Gln Pro His Phe His Gly Thr Glu Pro Ile Phe Phe Ser Phe Tyr Val 350 Phe Phe Thr Lys Phe Ala Ser Gly Val Ser Leu Gly Ile Ser Thr Leu Ser Leu Asp Phe Ala Gly Tyr Gln Thr Arg Gly Cys Ser Gln 390 380 385 Pro Glu Arg Val Lys Phe Thr Leu Asn Met Leu Val Thr Met Ala 400 Pro Ile Val Leu Ile Leu Leu Gly Leu Leu Phe Lys Met Tyr 420 415 410

Pro Ile Asp Glu Glu Arg Arg Gln Asn Lys Lys Ala Leu Gln 425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp 440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu 455

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- <211> 571
- <212> DNA
- <213> Homo sapiens
- <400> 21

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- <210> 22
- <211> 1173
- <212> DNA
- <213> Homo sapiens
- <100> 22

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<213> Homo sapiens

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Val Thr Leu His His 35

Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu 60

Asn Ile Ala Ala Val Leu Cys Ile Ala Thr 10

Lys Gln Val His Ala Leu Ser Pro Glu Glu Glu Asn Val Ile Ile Lys 80

Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly 105

Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala 120

His Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr 135

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His Gly Lys Gln Val Phe Trp Ile Arg Leu Leu Val Ile Trp
Cys Gly Val Ser Ala Leu Ser Met Leu Thr Cys Ser Ser Val Leu
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His Ser Gly Asn Phe Gly Thr Asp Leu Glu Gln Lys Leu His Trp
Asn Pro Glu Asp Lys Gly Tyr Val Leu His Met Ile Thr Thr Ala
                                    205
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Ala Glu Trp Ser Met Ser Phe Ser Phe Phe Gly Phe Phe Leu Thr
Tyr Ile Arg Asp Phe Gln Lys Ile Ser Leu Arg Val Glu Ala Asn
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<211> 485

<212> DNA

<213> Homo sapiens

<220>

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<222> 14, 484

<223> unknown base

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<sup>&</sup>lt;210> 25

<sup>&</sup>lt;211> 40

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

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<210> 28

<211> 264

<212> PRT

<213> Homo sapiens

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Phe Ala Leu Tyr Leu Leu Ser Thr Arg Leu Pro Arg Gly Arg Arg 20 25 30

Leu Gly Ser Thr Glu Glu Ala Gly Gly Arg Ser Leu Trp Phe Pro 35 40 45

Ser Asp Leu Ala Glu Leu Arg Glu Leu Ser Glu Val Leu Arg Glu
50 55 60

Tyr Arg Lys Glu His Gln Ala Tyr Val Phe Leu Leu Phe Cys Gly
65 70 75

Ala Tyr Leu Tyr Lys Gln Gly Phe Ala Ile Pro Gly Ser Ser Phe 80 85 90

Leu Asn Val Leu Ala Gly Ala Leu Phe Gly Pro Trp Leu Gly Leu
95 100 105

Leu Leu Cys Cys Val Leu Thr Ser Val Gly Ala Thr Cys Cys Tyr 110 115 120

Leu Leu Ser Ser Ile Phe Gly Lys Gln Leu Val Val Ser Tyr Phe 125 130 135

Pro Asp Lys Val Ala Leu Leu Gln Arg Lys Val Glu Glu Asn Arg 140 145 150

Asn Ser Leu Phe Phe Phe Leu Leu Phe Leu Arg Leu Phe Pro Met 155 160 165

Thr Pro Asn Trp Phe Leu Asn Leu Ser Ala Pro Ile Leu Asn Ile 170 175 180

Pro Ile Val Gln Phe Phe Phe Ser Val Leu Ile Gly Leu Ile Pro 185 190 195

Tyr Asn Phe Ile Cys Val Gln Thr Gly Ser Ile Leu Ser Thr Leu 200 205 210

Thr Ser Leu Asp Ala Leu Phe Ser Trp Asp Thr Val Phe Lys Leu 225

Leu Ala Ile Ala Met Val Ala Leu Ile Pro Gly Thr Leu Ile Lys 230

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- <210> 30
- <211> 347
- <212> PRT

<213> Homo sapiens														
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Ser	Glu	Lys	Ala	Ile 35	Glu	Lys	Phe	Ile	Arg 40	Gln	Leu	Leu	Glu	Lys 45
Asn	Glu	Pro	Gln	Arg 50	Pro	Pro	Pro	Gln	Tyr 55	Pro	Leu	Leu	Ile	Val 60
Val	Tyr	Lys	Val	Leu 65	Ala	Thr	Leu	Gly	Leu 70	Ile	Leu	Leu	Thr	Ala 75
Tyr	Phe	Val	Ile	Gln 80	Pro	Phe	Ser	Pro	Leu 85	Ala	Pro	Glu	Pro	Val 90
Leu	Ser	Gly	Ala	His 95	Thr	Trp	Arg	Ser	Leu 100	Ile	His	His	Ile	Arg 105
Leu	Met	Ser	Leu	Pro 110	Ile	Ala	Lys	Lys	Tyr 115	Met	Ser	Glu	Asn	Lys 120
Gly	Val	Pro	Leu	His 125	Gly	Gly	Asp	Glu	Asp 130	Arg	Pro	Phe	Pro	Asp 135
Phe	Asp	Pro	Trp	Trp 140	Thr	Asn	Asp	Cys	Glu 145	Gln	Asn	Glu	Ser	Glu 150
Pro	Ile	Pro	Ala	Asn 155	Cys	Thr	Gly	Cys	Ala 160	Gln	Lys	His	Leu	Lys 165
Val	Met	Leu	Leu	Glu 170	Asp	Ala	Pro	Arg	Lys 175	Phe	Glu	Arg	Leu	His 180
Pro	Leu	Val	Ile	Lys 185	Thr	Gly	Lys	Pro	Leu 190	Leu	Glu	Glu	Glu	Ile 195
Gln	His	Phe	Leu	Cys 200	Gln	Tyr	Pro	Glu	Ala 205	Thr	Glu	Gly	Phe	Ser 210
Glu	Gly	Phe	Phe	Ala 215	Lys	Trp	Trp	Arg	Cys 220	Phe	Pro	Glu	Arg	Trp 225
Phe	Pro	Phe	Pro	Tyr 230		Trp	Arg	Arg	Pro 235	Leu	Asn	Arg	Ser	Gln 240
Met	Leu	Arg	Glu	Leu 245		Pro	Val	Phe	Thr 250	His	Leu	Pro	Phe	Pro 255

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Val Val Gly Ser Lys Met His Lys Met Pro 280

Gly Ser Gly Glu Ala Met Leu Gln Leu Ile 295

Arg Arg His Cys Gln Ser Val Ala Met Pro 310

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Arg Gly Val Gln Pro 335

Leu Val Ile Cys Asp 340

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- <211> 478
- <212> DNA
- <213> Homo sapiens
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   cgcagtatcc tctccttata gttgtgtata aggttctcgc aaccttggga 400
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- <210> 32
- <211> 3531
- <212> DNA
- <213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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10

Gln Glu Leu Val Leu Glu Pro Ala Gln Arg Arg Ala Arg Leu Glu

Gly Leu Arg Tyr Thr Ala Val Leu Lys Gln Gln Ala Thr Gln His

Ser Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala

Ser Pro Cys Gly Ala Trp Ala Leu Arg Asp Thr Pro Ile Pro Arg 105

Trp Lys Leu Ser Ser Ala Glu Thr Tyr Ser Arg Met Arg Leu Lys 115 110

Leu Val Pro Asn His His Phe Asp Pro His Leu Glu Ala Ser Ala

Leu Arg Asp Asn Leu Gly Glu Val Pro Leu Thr Pro Thr Glu Glu 150 140

Ala Ser Leu Pro Leu Ala Val Thr Lys Glu Ala Lys Val Ser Thr 155

Pro Pro Glu Leu Leu Gln Glu Asp Gln Leu Gly Glu Asp Glu Leu

Ala Glu Leu Glu Thr Pro Met Glu Ala Ala Glu Leu Asp Glu Gln

Arg Glu Lys Leu Val Leu Ser Ala Glu Cys Gln Leu Val Thr Val 200

Val Ala Val Val Pro Gly Leu Leu Glu Val Thr Thr Gln Asn Val 225

Tyr Phe Tyr Asp Gly Ser Thr Glu Arg Val Glu Thr Glu Glu Gly 240 230

Ile Gly Tyr Asp Phe Arg Arg Pro Leu Ala Gln Leu Arg Glu Val 245

His Leu Arg Arg Phe Asn Leu Arg Arg Ser Ala Leu Glu Leu Phe 265 260

Phe	Ile	Asp	Gln	Ala 275	Asn	Tyr	Phe	Leu	Asn 280	Phe	Pro	Cys	Lys	Val 285
Gly	Thr	Thr	Pro	Val 290	Ser	Ser	Pro	Ser	Gln 295	Thr	Pro	Arg	Pro	Gln 300
Pro	Gly	Pro	Ile	Pro 305	Pro	His	Thr	Gln	Val 310	Arg	Asn	Gln	Val	Tyr 315
Ser	Trp	Leu	Leu	Arg 320	Leu	Arg	Pro	Pro	Ser 325	Gln	Gly	Tyr	Leu	Ser 330
Ser	Arg	Ser	Pro	Gln 335	Glu	Met	Leu	Arg	Ala 340	Ser	Gly	Leu	Thr	Gln 345
Lys	Trp	Val	Gln	Arg 350	Glu	Ile	Ser	Asn	Phe 355	Glu	Tyr	Leu	Met	Gln 360
Leu	Asn	Thr	Ile	Ala 365	Gly	Arg	Thr	Tyr	Asn 370	Asp	Leu	Ser	Gln	Tyr 375
Pro	Val	Phe	Pro	Trp 380	Val	Leu	Gln	Asp	Tyr 385	Val	Ser	Pro	Thr	Leu 390
Asp	Leu	Ser	Asn	Pro 395	Ala	Val	Phe	Arg	Asp 400	Leu	Ser	Lys	Pro	Ile 405
Gly	Val	Val	Asn	Pro 410	Lys	His	Ala	Gln	Leu 415	Val	Arg	Glu	Lys	Tyr 420
Glu	Ser	Phe	Glu	Asp 425	Pro	Ala	Gly	Thr	Ile 430	Asp	Lys	Phe	His	Tyr 435
Gly	Thr	His	Tyr	Ser 440	Asn	Ala	Ala	Gly	Val 445	Met	His	Tyr	Leu	Ile 450
Arg	Val	Glu	Pro	Phe 455	Thr	Ser	Leu	His	Val 460	Gln	Leu	Gln	Ser	Gly 465
Arg	Phe	Asp	Cys	Ser 470	Asp	Arg	Gln	Phe	His 475	Ser	Val	Ala	Ala	Ala 480
Trp	Gln	Ala	Arg	Leu 485	Glu	Ser	Pro	Ala	Asp 490	Val	Lys	Glu	Leu	Ile 495
Pro	Glu	Phe	Phe	Tyr 500	Phe	Pro	Asp	Phe	Leu 505	Glu	Asn	Gln	Asn	Gly 510
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Val	Val	Leu	Pro	Pro 530		Ala	Ser	Ser	Pro 535	Glu	Asp	Phe	Ile	Gln 540
Gln	His	Arg	Gln	Ala 545		Glu	Ser	Glu	Tyr 550	Val	Ser	Ala	His	Leu 555
His	Glu	Trp	Ile	Asp 560		Ile	Phe	Gly	Tyr 565		Gln	Arg	Gly	Pro 570
Ala	Ala	Glu	Glu	Ala 575		Asn	Val	Phe	Tyr 580		Cys	Thr	Tyr	Glu 585

Gly Ala Val Asp Leu Asp His Val Thr Asp Glu Arg Glu Arg Lys 590 Ala Leu Glu Gly Ile Ile Ser Asn Phe Gly Gln Thr Pro Cys Gln Leu Leu Lys Glu Pro His Pro Thr Arg Leu Ser Ala Glu Glu Ala Ala His Arg Leu Ala Arg Leu Asp Thr Asn Ser Pro Ser Ile Phe 635 Gln His Leu Asp Glu Leu Lys Ala Phe Phe Ala Glu Val Thr Val 655 650 Ser Ala Ser Gly Leu Leu Gly Thr His Ser Trp Leu Pro Tyr Asp Arg Asn Ile Ser Asn Tyr Phe Ser Phe Ser Lys Asp Pro Thr Met 690 685 680 Gly Ser His Lys Thr Gln Arg Leu Leu Ser Gly Pro Trp Val Pro 700 Gly Ser Gly Val Ser Gly Gln Ala Leu Ala Val Ala Pro Asp Gly Lys Leu Leu Phe Ser Gly Gly His Trp Asp Gly Ser Leu Arg Val 735 730 Thr Ala Leu Pro Arg Gly Lys Leu Leu Ser Gln Leu Ser Cys His Leu Asp Val Val Thr Cys Leu Ala Leu Asp Thr Cys Gly Ile Tyr 755 Leu Ile Ser Gly Ser Arg Asp Thr Thr Cys Met Val Trp Arg Leu Leu His Gln Gly Gly Leu Ser Val Gly Leu Ala Pro Lys Pro Val Gln Val Leu Tyr Gly His Gly Ala Ala Val Ser Cys Val Ala Ile Ser Thr Glu Leu Asp Met Ala Val Ser Gly Ser Glu Asp Gly Thr Val Ile Ile His Thr Val Arg Arg Gly Gln Phe Val Ala Ala Leu 830 835 Arg Pro Leu Gly Ala Thr Phe Pro Gly Pro Ile Phe His Leu Ala 845 Leu Gly Ser Glu Gly Gln Ile Val Val Gln Ser Ser Ala Trp Glu 870 860 865 Arg Pro Gly Ala Gln Val Thr Tyr Ser Leu His Leu Tyr Ser Val 880 Asn Gly Lys Leu Arg Ala Ser Leu Pro Leu Ala Glu Gln Pro Thr 900 890

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Ala Leu Thr Val Thr Glu Asp Phe Val Leu Leu Gly Thr Ala Gln
                905
Cys Ala Leu His Ile Leu Gln Leu Asn Thr Leu Leu Pro Ala Ala
Pro Pro Leu Pro Met Lys Val Ala Ile Arg Ser Val Ala Val Thr
Lys Glu Arg Ser His Val Leu Val Gly Leu Glu Asp Gly Lys Leu
Ile Val Val Ala Gly Gln Pro Ser Glu Val Arg Ser Ser Gln
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Phe Ala Arg Lys Leu Trp Arg Ser Ser Arg Arg Ile Ser Gln Val
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Ser Ser Gly Glu Thr Glu Tyr Asn Pro Thr Glu Ala Arg
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<211> 43

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 35

<211> 1395

<212> DNA

<213> Homo sapiens

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gaggeaggag aategettga aeeeggagg eagagttee agtgageega 1300
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<211> 321

<212> PRT

<213> Homo sapiens

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Lys Leu Arg Gly Val Gln Asn Pro Val Ala Arg Cys Ile Met Cys
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Cys Phe Lys Cys Cys Leu Trp Cys Leu Glu Lys Phe Ile Lys Phe
Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Lys Asn
Phe Cys Val Ser Ala Lys Asn Ala Phe Met Leu Leu Met Arg Asn
                                    190
Ile Val Arg Val Val Leu Asp Lys Val Thr Asp Leu Leu
                200
Phe Phe Gly Lys Leu Leu Val Val Gly Val Gly Val Leu Ser
Phe Phe Phe Ser Gly Arg Ile Pro Gly Leu Gly Lys Asp Phe
Lys Ser Pro His Leu Asn Tyr Tyr Trp Leu Pro Ile Met Thr Ser
                                    250
Ile Leu Gly Ala Tyr Val Ile Ala Ser Gly Phe Phe Ser Val Phe
Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu Asp Leu
Glu Arg Asn Asn Gly Ser Leu Asp Arg Pro Tyr Tyr Met Ser Lys
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Ser Leu Leu Lys Ile Leu Gly Lys Lys Asn Glu Ala Pro Pro Asp
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Asn Lys Lys Arg Lys Lys
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<211> 24
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<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
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<210> 40
<211> 1365
<212> DNA
<213> Homo sapiens
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 ctttgtgtgt gactcccata ggccagtcaa tgtcgtcaat gtatacaacg 400
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<211> 566

<212> PRT

<213> Homo sapiens

<400> 41

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Cys Ala Cys Lys Ile Leu Gln Ala Leu Phe Gln Cys Asp His Val 35 40 45

Gln Tyr Thr Leu Val Pro Val Ser Gly Trp Gln Glu Leu Glu Thr 50 55 60

Ala Phe Leu Glu His Lys Glu Gln Phe His Tyr Phe Ile Leu Ile
65 70 75

Asn Cys Gly Ala Asn Val Asp Leu Leu Asp Ile Leu Gln Pro Asp 80 85 90

Glu Asp Thr Ile Phe Phe Val Cys Asp Ser His Arg Pro Val Asn 95 100 105

Val Val Asn Val Tyr Asn Asp Thr Gln Ile Lys Leu Leu Ile Lys 110  $\phantom{000}$  115  $\phantom{000}$  120

Asp Glu Glu Glu Asp Glu Glu His Ser Gly Asn Asp Ser Asp Gly 140 145

Ser Glu Pro Ser Glu Lys Arg Thr Arg Leu Glu Glu Glu Ile Val 155 160 165

Glu Gln Thr Met Arg Arg Gln Arg Arg Glu Trp Glu Ala Arg 170 175 180

Arg Arg Asp Ile Leu Phe Asp Tyr Glu Gln Tyr Glu Tyr His Gly 185 190 190

Thr Ser Ser Ala Met Val Met Phe Glu Leu Ala Trp Met Leu Ser 200 205 210

Asp Gln Trp Val Gln Asp Lys Ile Thr Gln Met Lys Tyr Val Thr
230 235 240

Asp Val Gly Val Leu Gln Arg His Val Ser Arg His Asn His Arg

LOCAL PROPER

				245					250					255
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Ser	Phe	Glu	Tyr	Asp 275	Leu	Arg	Leu	Val	Leu 280	Tyr	Gln	His	Trp	Ser 285
Leu	His	Asp	Ser	Leu 290	Cys	Asn	Thr	Ser	Tyr 295	Thr	Ala	Ala	Arg	Phe 300
Lys	Leu	Trp	Ser	Val 305	His	Gly	Gln	Lys	Arg 310	Leu	Gln	Glu	Phe	Leu 315
Ala	Asp	Met	Gly	Leu 320	Pro	Leu	Lys	Gln	Val 325	Lys	Gln	Lys	Phe	Gln 330
Ala	Met	Asp	Ile	Ser 335	Leu	Lys	Glu	Asn	Leu 340	Arg	Glu	Met	Ile	Glu 345
Glu	Ser	Ala	Asn	Lys 350	Phe	Gly	Met	Lys	Asp 355	Met	Arg	Val	Gln	Thr 360
Phe	Ser	Ile	His	Phe 365	Gly	Phe	Lys	His	Lys 370	Phe	Leu	Ala	Ser	Asp 375
Val	Val	Phe	Ala	Thr 380	Met	Ser	Leu	Met	Glu 385	Ser	Pro	Glu	Lys	Asp 390
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Lys	Gln	Leu	Arg	Ala 425	Thr	Gln	Gln	Thr	Ile 430	Ala	Ser	Cys	Leu	Cys 435
Thr	Asn	Leu	Val	Ile 440	Ser	Gln	Gly	Pro	Phe 445	Leu	Tyr	Cys	Ser	Leu 450
Met	Glu	Gly	Thr	Pro 455	Asp	Val	Met	Leu	Phe 460	Ser	Arg	Pro	Ala	Ser 465
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Thr	Lys	Asn	Arg	Arg 485	Cys	Lys	Leu	Leu	Pro 490		Val	Met	Ala	Ala 495
Pro	Leu	Ser	Met	Glu 500	His	Gly	Thr	Val	Thr 505		Val	Gly	Ile	Pro 510
Pro	Glu	Thr	Asp	Ser 515	Ser	Asp	Arg	Lys	Asn 520		Phe	Gly	Arg	Ala 525
Phe	Glu	. Lys	Ala	Ala 530	Glu	Ser	Thr	Ser	Ser 535		Met	Leu	His	Asn 540
His	Phe	Asp	Leu	Ser 545	Val	Ile	Glu	Leu	Lys 550		Glu	Asp	Arg	Ser 555
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<223> unknown base
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 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
 tattttattc tcataaactg tggagctaat gtagacctat tggatattct 300
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<210> 45
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<212> DNA
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Lys Lys Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly
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175

165

Leu Leu Val Glu Lys Leu Glu Thr Leu Asp Lys Asn Asn Val Leu 205

Tyr Thr Glu Leu Asp Phe Glu Leu Ile Lys Val Glu Val Lys Glu

Met Glu Lys Leu Val Ile Gln Leu Lys Glu Ser Phe Gly Gly Ser

155

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Asn Cys Asn Pro Ser Leu Leu Ser Ile Ile Gly Tyr Asn Thr Thr
                290
Ser Thr Val Pro Lys Glu Gly Gln Ser Val Gln Trp Trp His Ala
Gln Gly Ile Ile Gly Leu Ile Leu Phe Leu Leu Cys Val Phe Tyr
                                    325
Ser Ser Ile Arg Thr Ser Asn Asn Ser Gln Val Asn Lys Leu Thr
Leu Thr Ser Asp Glu Ser Thr Leu Ile Glu Asp Gly Gly Ala Arg
                                                         360
                                     355
                350
Ser Asp Gly Ser Leu Glu Asp Gly Asp Asp Val His Arg Ala Val
Asp Asn Glu Arg Asp Gly Val Thr Tyr Ser Tyr Ser Phe Phe His
                380
Phe Met Leu Phe Leu Ala Ser Leu Tyr Ile Met Met Thr Leu Thr
                                     400
                                                         405
Asn Trp Ser Arg Tyr Glu Pro Ser Arg Glu Met Lys Ser Gln Trp
Thr Ala Val Trp Val Lys Ile Ser Ser Ser Trp Ile Gly Ile Val
Leu Tyr Val Trp Thr Leu Val Ala Pro Leu Val Leu Thr Asn Arg
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Asp Phe Asp

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<211> 480

<212> DNA

<213> Homo sapiens

<220>

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<222> 48, 163

<223> unknown base

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<210> 75

<211> 438

<212> DNA

<213> Homo sapiens

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<221> unsure

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<223> unknown base

<400> 75

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<210> 76

<211> 473

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 48

<223> unknown base

<400> 76

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<213> Homo sapiens
<220>
<221> unsure
<222> 21, 111
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 caggattgga ngaacaactg aataagattc ctggattttt gtgagaatga 150
 gaaaggtgtt gtccccttgt aacatttttg gttggctata aagctgtata 200
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<400> 79
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 <211> 26
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<210> 81
<211> 23
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<211> 54
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<211> 3906
<212> DNA
<213> Homo sapiens
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<211> 867

<212> PRT

<213> Homo sapiens

<400> 84

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Phe Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Leu Lys Gly Arg Phe Gln Arg Asp Arg Asp Ile Arg Pro Asp 35 40 45

Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser 50 55 60

Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly 65 70 75

Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro 80 85 90

Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn 95 100 105

Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala 110 115 120

Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
125 130 135

Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
140 145

Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Lys 155 160 165

Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys 170 175 180

Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu 185 190 195

Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met 200 205 210

Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala Pro 215 220 225

His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro 230 235 240

Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn 245 250 255 Pro Asp Lys His Trp Ile Met Arg Tyr Thr Gly Pro Met Lys Pro Ile His Met Glu Phe Thr Asn Met Leu Gln Arg Lys Arg Leu Gln Thr Leu Met Ser Val Asp Asp Ser Met Glu Thr Ile Tyr Asn Met 295 Leu Val Glu Thr Gly Glu Leu Asp Asn Thr Tyr Ile Val Tyr Thr 305 Ala Asp His Gly Tyr His Ile Gly Gln Phe Gly Leu Val Lys Gly 320 Lys Ser Met Pro Tyr Glu Phe Asp Ile Arg Val Pro Phe Tyr Val Arg Gly Pro Asn Val Glu Ala Gly Cys Leu Asn Pro His Ile Val 355 Leu Asn Ile Asp Leu Ala Pro Thr Ile Leu Asp Ile Ala Gly Leu Asp Ile Pro Ala Asp Met Asp Gly Lys Ser Ile Leu Lys Leu Leu Asp Thr Glu Arg Pro Val Asn Arg Phe His Leu Lys Lys Met 395 400 Arg Val Trp Arg Asp Ser Phe Leu Val Glu Arg Gly Lys Leu Leu 410 His Lys Arg Asp Asn Asp Lys Val Asp Ala Gln Glu Glu Asn Phe 430 Leu Pro Lys Tyr Gln Arg Val Lys Asp Leu Cys Gln Arg Ala Glu 445 Tyr Gln Thr Ala Cys Glu Gln Leu Gly Gln Lys Trp Gln Cys Val Glu Asp Ala Thr Gly Lys Leu Lys Leu His Lys Cys Lys Gly Pro Met Arg Leu Gly Gly Ser Arg Ala Leu Ser Asn Leu Val Pro Lys 490 485 Tyr Tyr Gly Gln Gly Ser Glu Ala Cys Thr Cys Asp Ser Gly Asp Tyr Lys Leu Ser Leu Ala Gly Arg Arg Lys Lys Leu Phe Lys Lys 515 Lys Tyr Lys Ala Ser Tyr Val Arg Ser Arg Ser Ile Arg Ser Val 535 Ala Ile Glu Val Asp Gly Arg Val Tyr His Val Gly Leu Gly Asp Ala Ala Gln Pro Arg Asn Leu Thr Lys Arg His Trp Pro Gly Ala 565 560

Pro Glu Asp Gln Asp Asp Lys Asp Gly Gly Asp Phe Ser Gly Thr Gly Gly Leu Pro Asp Tyr Ser Ala Ala Asn Pro Ile Lys Val Thr His Arg Cys Tyr Ile Leu Glu Asn Asp Thr Val Gln Cys Asp Leu 610 Asp Leu Tyr Lys Ser Leu Gln Ala Trp Lys Asp His Lys Leu His 620 Ile Asp His Glu Ile Glu Thr Leu Gln Asn Lys Ile Lys Asn Leu 635 Arg Glu Val Arg Gly His Leu Lys Lys Lys Arg Pro Glu Glu Cys Asp Cys His Lys Ile Ser Tyr His Thr Gln His Lys Gly Arg Leu Lys His Arg Gly Ser Ser Leu His Pro Phe Arg Lys Gly Leu Gln 680 Glu Lys Asp Lys Val Trp Leu Leu Arg Glu Gln Lys Arg Lys Lys Leu Arg Lys Leu Leu Lys Arg Leu Gln Asn Asn Asp Thr Cys 715 Ser Met Pro Gly Leu Thr Cys Phe Thr His Asp Asn Gln His Trp Gln Thr Ala Pro Phe Trp Thr Leu Gly Pro Phe Cys Ala Cys Thr Ser Ala Asn Asn Asn Thr Tyr Trp Cys Met Arg Thr Ile Asn Glu 755 760 Thr His Asn Phe Leu Phe Cys Glu Phe Ala Thr Gly Phe Leu Glu 770 Tyr Phe Asp Leu Asn Thr Asp Pro Tyr Gln Leu Met Asn Ala Val Asn Thr Leu Asp Arg Asp Val Leu Asn Gln Leu His Val Gln Leu 805 Met Glu Leu Arg Ser Cys Lys Gly Tyr Lys Gln Cys Asn Pro Arg 815 Thr Arg Asn Met Asp Leu Asp Gly Gly Ser Tyr Glu Gln Tyr Arg Gln Phe Gln Arg Arg Lys Trp Pro Glu Met Lys Arg Pro Ser Ser 850 Lys Ser Leu Gly Gln Leu Trp Glu Gly Trp Glu Gly 860

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ggccagctat ctccgcag 18
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<213> Homo sapiens

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Val Thr Val Ala Tyr Lys Phe His Met Gly Leu Tyr Gly Glu Thr
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Gly Arg Leu Phe Thr Glu Ser Cys Ser Ile Ser Pro Lys Leu Arg
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Phe Pro Tyr Thr Thr Ile Leu Ser Ile Trp Leu Ala Thr Arg Arg
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Ala Tyr Pro Arg Leu Glu Ile Tyr Gln Glu Asp Gln Ile His Phe
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Lys Glu Thr Glu Trp Lys Trp Arg Gly Leu Val Glu Ala Ile Asp
Thr Gln Val Asp Gly Thr Gly Ala Asp Thr Met Ser Asp Thr Ser
Ser Val Ser Leu Glu Val Ser Pro Gly Ser Arg Glu Thr Ser Ala
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Ala Thr Leu Ser Pro Gly Ala Ser Ser Arg Gly Trp Asp Asp Gly
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Asp Thr Arg Ser Glu His Ser Tyr Ser Glu Ser Gly Ala Ser Gly
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<213> Homo sapiens

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<211> 543

<212> DNA

<213> Homo sapiens

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- Leu Phe Phe Thr Gly Trp Trp Ile Ile Ile Asp Ala Ala Val Ile 35 40 45
- Tyr Pro Thr Met Lys Asp Phe Asn His Ser Tyr His Ala Cys Gly
  50 55 60
- Val Ile Ala Thr Ile Ala Phe Leu Met Ile Asn Ala Val Ser Asn 65 70 75
- Gly Gln Val Arg Gly Asp Ser Tyr Ser Glu Gly Cys Leu Gly Gln 80 85 90
- Thr Gly Ala Arg Ile Trp Leu Phe Val Gly Phe Met Leu Ala Phe 95 100 105
- Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Gly Tyr Val 110 115 120
- Ala Lys Glu Lys Asp Ile Val Tyr Pro Gly Ile Ala Val Phe Phe 125 130 135
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<210> 113

<211> 610

<212> PRT

<213> Homo sapiens

<400> 113

Met Trp Leu Pro Leu Val Leu Leu Leu Ala Val Leu Leu Leu Ala 1 10 15

Val Leu Cys Lys Val Tyr Leu Gly Leu Phe Ser Gly Ser Ser Pro 20 25 30

Asn Pro Phe Ser Glu Asp Val Lys Arg Pro Pro Ala Pro Leu Val

Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser 50 60

Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser 65 70 75

Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly 80 85 90

Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$ 

Cys His Thr Phe Gly Lys Asn Gly Leu Glu Phe Asp Thr Gly Ile His Tyr Ile Gly Arg Met Glu Glu Gly Ser Ile Gly Arg Phe Ile Leu Asp Gln Ile Thr Glu Gly Gln Leu Asp Trp Ala Pro Leu Ser Ser Pro Phe Asp Ile Met Val Leu Glu Gly Pro Asn Gly Arg Lys 155 160 1.65 Glu Tyr Pro Met Tyr Ser Gly Glu Lys Ala Tyr Ile Gln Gly Leu 170 175 Lys Glu Lys Phe Pro Gln Glu Glu Ala Ile Ile Asp Lys Tyr Ile 185 190 Lys Leu Val Lys Val Val Ser Ser Gly Ala Pro His Ala Ile Leu 200 Leu Lys Phe Leu Pro Leu Pro Val Val Gln Leu Leu Asp Arg Cys 215 Gly Leu Leu Thr Arg Phe Ser Pro Phe Leu Gln Ala Ser Thr Gln Ser Leu Ala Glu Val Leu Gln Gln Leu Gly Ala Ser Ser Glu Leu 245 Gln Ala Val Leu Ser Tyr Ile Phe Pro Thr Tyr Gly Val Thr Pro 260 265 Asn His Ser Ala Phe Ser Met His Ala Leu Leu Val Asn His Tyr 280 285 Met Lys Gly Gly Phe Tyr Pro Arg Gly Gly Ser Ser Glu Ile Ala 290 Phe His Thr Ile Pro Val Ile Gln Arg Ala Gly Gly Ala Val Leu 305 Thr Lys Ala Thr Val Gln Ser Val Leu Leu Asp Ser Ala Gly Lys Ala Cys Gly Val Ser Val Lys Lys Gly His Glu Leu Val Asn Ile 335 Tyr Cys Pro Ile Val Val Ser Asn Ala Gly Leu Phe Asn Thr Tyr 360 350 Glu His Leu Leu Pro Gly Asn Ala Arg Cys Leu Pro Gly Val Lys Gln Gln Leu Gly Thr Val Arg Pro Gly Leu Gly Met Thr Ser Val 390 380 Phe Ile Cys Leu Arg Gly Thr Lys Glu Asp Leu His Leu Pro Ser Thr Asn Tyr Tyr Val Tyr Tyr Asp Thr Asp Met Asp Gln Ala Met 415

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Glu Arg Tyr Val Ser Met Pro Arg Glu Glu Ala Ala Glu His Ile
Pro Leu Leu Phe Phe Ala Phe Pro Ser Ala Lys Asp Pro Thr Trp
Glu Asp Arg Phe Pro Gly Arg Ser Thr Met Ile Met Leu Ile Pro
Thr Ala Tyr Glu Trp Phe Glu Glu Trp Gln Ala Glu Leu Lys Gly
                470
                                    475
Lys Arg Gly Ser Asp Tyr Glu Thr Phe Lys Asn Ser Phe Val Glu
                                    490
                485
Ala Ser Met Ser Val Val Leu Lys Leu Phe Pro Gln Leu Glu Gly
                500
                                    505
Lys Val Glu Ser Val Thr Ala Gly Ser Pro Leu Thr Asn Gln Phe
                                                         525
                515
Tyr Leu Ala Ala Pro Arg Gly Ala Cys Tyr Gly Ala Asp His Asp
                                    535
                530
Leu Gly Arg Leu His Pro Cys Val Met Ala Ser Leu Arg Ala Gln
Ser Pro Ile Pro Asn Leu Tyr Leu Thr Gly Gln Asp Ile Phe Thr
                                                         570
                                    565
Cys Gly Leu Val Gly Ala Leu Gln Gly Ala Leu Leu Cys Ser Ser
                575
Ala Ile Leu Lys Arg Asn Leu Tyr Ser Asp Leu Lys Asn Leu Asp
                                                         600
                                    595
Ser Arg Ile Arg Ala Gln Lys Lys Asn
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<sup>&</sup>lt;210> 114

<sup>&</sup>lt;211> 1701

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 114

gcagcggcga ggcggcggtg gtggctgagt ccgtggtggc agaggcgaag 50 gcgacagctc taggggttgg caccggcccc gagaggagga tgcgggtccg 100 gatagggctg acgctgctgc tgtgtgcggt gctgctgagc ttggcctcgg 150 cgtcctcgga tgaagaaggc agccaggatg aatccttaga ttccaagact 200 actttgacat cagatgagtc agtaaaggac catactactg caggcagagt 250 agttgctggt caaatatttc ttgattcaga agaatctgaa ttagaatcct 300 ctattcaaga agaggaagac agcctcaaga gccaagaggg ggaaagtgtc 350 acagaagata tcagcttct agagtctca aatccagaaa acaaggacta 400 tgaagagcca aagaaagtac ggaaaccagc tttgaccgc attgaaggca 450

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 tacaacctat gactacaaag cagatgaaaa gtggggcttt tgtgaaactg 600
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 ccctggagag agtgtcatat gctcttttat ttggtgatta cttgccacag 800
 aatatccagg cagcgagaga gatgtttgag aagctgactg aggaaggctc 850
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 tactttctqt tttttacttt tcatqattqq ctqtcttccc atttattctq 1500
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 a 1701
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Leu Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp 20 25 30

<sup>&</sup>lt;210> 115

<sup>&</sup>lt;211> 301

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 115

Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu 1 5 10 15

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Glu Ser Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val
Lys Asp His Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe
Leu Asp Ser Glu Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu
Glu Asp Ser Leu Lys Ser Gln Glu Gly Glu Ser Val Thr Glu Asp
Ile Ser Phe Leu Glu Ser Pro Asn Pro Glu Asn Lys Asp Tyr Glu
                                    100
                 95
Glu Pro Lys Lys Val Arg Lys Pro Ala Leu Thr Ala Ile Glu Gly
                                    115
Thr Ala His Gly Glu Pro Cys His Phe Pro Phe Leu Phe Leu Asp
                                    130
Lys Glu Tyr Asp Glu Cys Thr Ser Asp Gly Arg Glu Asp Gly Arg
                                    145
Leu Trp Cys Ala Thr Thr Tyr Asp Tyr Lys Ala Asp Glu Lys Trp
Gly Phe Cys Glu Thr Glu Glu Glu Ala Ala Lys Arg Arg Gln Met
Gln Glu Ala Glu Met Met Tyr Gln Thr Gly Met Lys Ile Leu Asn
                                     190
Gly Ser Asn Lys Lys Ser Gln Lys Arg Glu Ala Tyr Arg Tyr Leu
                200
                                     205
Gln Lys Ala Ala Ser Met Asn His Thr Lys Ala Leu Glu Arg Val
Ser Tyr Ala Leu Leu Phe Gly Asp Tyr Leu Pro Gln Asn Ile Gln
                                     235
                230
Ala Ala Arg Glu Met Phe Glu Lys Leu Thr Glu Glu Gly Ser Pro
Lys Gly Gln Thr Ala Leu Gly Phe Leu Tyr Ala Ser Gly Leu Gly
Val Asn Ser Ser Gln Ala Lys Ala Leu Val Tyr Tyr Thr Phe Gly
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                                     280
Ala Leu Gly Gly Asn Leu Ile Ala His Met Val Leu Val Ser Arg
                290
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Leu

<210> 116

<211> 584

<212> DNA

<213> Homo sapiens

<400> 116

cttcccagcc ctgtgccca aagcacctgg agcatatagc cttgcagaac 50 ttctacttgc ctgcctccct gcctctggcc atggcctgcc ggtgcctcag 100 cttccttctg atggggacct tcctgtcagt ttcccagaca gtcctggccc 150 agctggatgc actgctggtc ttcccaggcc aagtggctca actctctgc 200 acgctcagcc cccagcacgt caccatcagg gactacggtg tgtcctggta 250 ccagcagcgg gcaggcagtg cccctcgata tctcctcac taccgctcgg 300 aggaggatca ccaccagcct gctgacatcc ccgatcgatt ctcggcagcc 350 aaggatgagg cccacaatgc ctgtgtcctc accattagtc ccgtgcagcc 400 tgaagacgac gcggattact actgctctgt tggctacggc tttagtccct 450 aggggtgggg tgtgagatgg gtgcctcccc tctgcctccc atttctgcc 500 ctgaccttgg gtccctttta aactttctct gagccttgct tcccctctgt 550 aaaatgggtt aataatattc aacatgtcaa caac 584

<210> 117 <211> 123

<212> PRT <213> Homo sapiens

<400> 117

Met Ala Cys Arg Cys Leu Ser Phe Leu Leu Met Gly Thr Phe Leu 1 5 10 15

Ser Val Ser Gln Thr Val Leu Ala Gln Leu Asp Ala Leu Leu Val 20 25 30

Phe Pro Gly Gln Val Ala Gln Leu Ser Cys Thr Leu Ser Pro Gln \$35\$ 40 45

His Val Thr Ile Arg Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg 50  $\phantom{000}$  55  $\phantom{000}$  60

Ala Gly Ser Ala Pro Arg Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu
65 70 75

Asp His His Arg Pro Ala Asp Ile Pro Asp Arg Phe Ser Ala Ala 80 85 90

Lys Asp Glu Ala His Asn Ala Cys Val Leu Thr Ile Ser Pro Val 95 100 105

Gln Pro Glu Asp Asp Ala Asp Tyr Tyr Cys Ser Val Gly Tyr Gly
110 115 120

Phe Ser Pro

<210> 118

<211> 3402

<212> DNA

<213> Homo sapiens

<400> 118

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<210> 119

<211> 504

<212> PRT

<213> Homo sapiens

<400> 119

Met Thr Pro Ser Pro Leu Leu Leu Leu Leu Leu Pro Pro Leu Leu 1 5 10 15

Leu Gly Ala Phe Pro Pro Ala Ala Ala Ala Arg Gly Pro Pro Lys 20 25 30

Met Ala Asp Lys Val Val Pro Arg Gln Val Ala Arg Leu Gly Arg
35 40 45

Thr Val Arg Leu Gln Cys Pro Val Glu Gly Asp Pro Pro Pro Leu
50 55 60

Thr Met Trp Thr Lys Asp Gly Arg Thr Ile His Ser Gly Trp Ser
65 70 75

Arg Phe Arg Val Leu Pro Gln Gly Leu Lys Val Lys Gln Val Glu 80 85 90

Arg Glu Asp Ala Gly Val Tyr Val Cys Lys Ala Thr Asn Gly Phe 95 100 105

Gly Ser Leu Ser Val Asn Tyr Thr Leu Val Val Leu Asp Asp Ile 110 115 120

Ser Pro Gly Lys Glu Ser Leu Gly Pro Asp Ser Ser Ser Gly Gly 125 130 135

Gln Glu Asp Pro Ala Ser Gln Gln Trp Ala Arg Pro Arg Phe Thr 140 145 150

Gln Pro Ser Lys Met Arg Arg Arg Val Ile Ala Arg Pro Val Gly
155 160 165

Ser Ser Val Arg Leu Lys Cys Val Ala Ser Gly His Pro Arg Pro 170 175 180

Asp Ile Thr Trp Met Lys Asp Asp Gln Ala Leu Thr Arg Pro Glu 185 190 195

Ala Ala Glu Pro Arg Lys Lys Lys Trp Thr Leu Ser Leu Lys Asn 200 205 210

Leu Arg Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val Ser Asn 215 220 225

Arg Ala Gly Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile Gln 230 235 240

<400> 120

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Thr Thr Val Asp Phe Gly Gly Thr Thr Ser Phe Gln Cys Lys Val
Arg Ser Asp Val Lys Pro Val Ile Gln Trp Leu Lys Arg Val Glu
                                                         285
                 275
                                     280
Tyr Gly Ala Glu Gly Arg His Asn Ser Thr Ile Asp Val Gly Gly
Gln Lys Phe Val Val Leu Pro Thr Gly Asp Val Trp Ser Arg Pro
                                                          315
Asp Gly Ser Tyr Leu Asn Lys Leu Leu Ile Thr Arg Ala Arg Gln
                                                          330
Asp Asp Ala Gly Met Tyr Ile Cys Leu Gly Ala Asn Thr Met Gly
                 335
Tyr Ser Phe Arg Ser Ala Phe Leu Thr Val Leu Pro Asp Pro Lys
Pro Pro Gly Pro Pro Val Ala Ser Ser Ser Ser Ala Thr Ser Leu
Pro Trp Pro Val Val Ile Gly Ile Pro Ala Gly Ala Val Phe Ile
                                                          390
                                     385
                 380
Leu Gly Thr Leu Leu Leu Trp Leu Cys Gln Ala Gln Lys Lys Pro
                 395
                                     400
Cys Thr Pro Ala Pro Ala Pro Pro Leu Pro Gly His Arg Pro Pro
                                                          420
                 410
                                     415
Gly Thr Ala Arg Asp Arg Ser Gly Asp Lys Asp Leu Pro Ser Leu
                 425
Ala Ala Leu Ser Ala Gly Pro Gly Val Gly Leu Cys Glu Glu His
 Gly Ser Pro Ala Ala Pro Gln His Leu Leu Gly Pro Gly Pro Val
Ala Gly Pro Lys Leu Tyr Pro Lys Leu Tyr Thr Asp Ile His Thr
 His Thr His Thr His Ser His Thr His Ser His Val Glu Gly Lys
 Val His Gln His Ile His Tyr Gln Cys
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<213> Artificial Sequence
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<210> 121
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<210> 122
<211> 45
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<211> 4420
<212> DNA
<213> Homo sapiens
<400> 123
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Arg Arg Val Gln Pro Gly Lys Lys Asn Pro Ser Ile Phe Ala Lys 35 40 45

Pro Ala Asp Thr Leu Glu Ser Pro Gly Glu Trp Thr Trp Phe 50 55 60

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Ala Ile Arg Phe Tyr Tyr Gly Asp Arg Val Cys Ala Arg Pro Leu 80 85 90

Arg Leu Glu Ala Arg Thr Thr Asp Trp Thr Pro Ala Gly Ser Thr 95 100 105

Gly Gln Val Val His Gly Ser Pro Arg Glu Gly Phe Trp Cys Leu 110 115 120

Asn Arg Glu Gln Arg Pro Gly Gln Asn Cys Ser Asn Tyr Thr Val 125 130 135

Arg Phe Leu Cys Pro Pro Gly Ser Leu Arg Arg Asp Thr Glu Arg 140 145 150

Ile Trp Ser Pro Trp Ser Pro Trp Ser Lys Cys Ser Ala Ala Cys
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Gly Gln Thr Gly Val Gln Thr Arg Thr Arg Ile Cys Leu Ala Glu 170 175 180

Met Val Ser Leu Cys Ser Glu Ala Ser Glu Glu Gly Gln His Cys 185 190 195

Met Gly Gln Asp Cys Thr Ala Cys Asp Leu Thr Cys Pro Met Gly 200 205 210

Gln Val Asn Ala Asp Cys Asp Ala Cys Met Cys Gln Asp Phe Met Leu His Gly Ala Val Ser Leu Pro Gly Gly Ala Pro Ala Ser Gly 235 Ala Ala Ile Tyr Leu Leu Thr Lys Thr Pro Lys Leu Leu Thr Gln 250 Thr Asp Ser Asp Gly Arg Phe Arg Ile Pro Gly Leu Cys Pro Asp 260 Gly Lys Ser Ile Leu Lys Ile Thr Lys Val Lys Phe Ala Pro Ile 285 280 275 Val Leu Thr Met Pro Lys Thr Ser Leu Lys Ala Ala Thr Ile Lys 300 290 Ala Glu Phe Val Arg Ala Glu Thr Pro Tyr Met Val Met Asn Pro 315 310 Glu Thr Lys Ala Arg Arg Ala Gly Gln Ser Val Ser Leu Cys Cys 320 Lys Ala Thr Gly Lys Pro Arg Pro Asp Lys Tyr Phe Trp Tyr His Asn Asp Thr Leu Leu Asp Pro Ser Leu Tyr Lys His Glu Ser Lys 355 Leu Val Leu Arg Lys Leu Gln Gln His Gln Ala Gly Glu Tyr Phe 365 Cys Lys Ala Gln Ser Asp Ala Gly Ala Val Lys Ser Lys Val Ala 390 385 380 Gln Leu Ile Val Thr Ala Ser Asp Glu Thr Pro Cys Asn Pro Val 400 Pro Glu Ser Tyr Leu Ile Arg Leu Pro His Asp Cys Phe Gln Asn 410 Ala Thr Asn Ser Phe Tyr Tyr Asp Val Gly Arg Cys Pro Val Lys 435 Thr Cys Ala Gly Gln Gln Asp Asn Gly Ile Arg Cys Arg Asp Ala 445 Val Gln Asn Cys Cys Gly Ile Ser Lys Thr Glu Glu Arg Glu Ile 460 Gln Cys Ser Gly Tyr Thr Leu Pro Thr Lys Val Ala Lys Glu Cys 475 Ser Cys Gln Arg Cys Thr Glu Thr Arg Ser Ile Val Arg Gly Arg 490 485 Val Ser Ala Ala Asp Asn Gly Glu Pro Met Arg Phe Gly His Val Tyr Met Gly Asn Ser Arg Val Ser Met Thr Gly Tyr Lys Gly Thr 525 Phe Thr Leu His Val Pro Gln Asp Thr Glu Arg Leu Val Leu Thr Phe Val Asp Arg Leu Gln Lys Phe Val Asn Thr Thr Lys Val Leu Pro Phe Asn Lys Lys Gly Ser Ala Val Phe His Glu Ile Lys Met Leu Arg Arg Lys Glu Pro Ile Thr Leu Glu Ala Met Glu Thr Asn 580 Ile Ile Pro Leu Gly Glu Val Val Gly Glu Asp Pro Met Ala Glu 590 Leu Glu Ile Pro Ser Arg Ser Phe Tyr Arg Gln Asn Gly Glu Pro Tyr Ile Gly Lys Val Lys Ala Ser Val Thr Phe Leu Asp Pro Arg 630 Asn Ile Ser Thr Ala Thr Ala Ala Gln Thr Asp Leu Asn Phe Ile 640 Asn Asp Glu Gly Asp Thr Phe Pro Leu Arg Thr Tyr Gly Met Phe Ser Val Asp Phe Arg Asp Glu Val Thr Ser Glu Pro Leu Asn Ala Gly Lys Val Lys Val His Leu Asp Ser Thr Gln Val Lys Met Pro 685 Glu His Ile Ser Thr Val Lys Leu Trp Ser Leu Asn Pro Asp Thr 700 Gly Leu Trp Glu Glu Glu Gly Asp Phe Lys Phe Glu Asn Gln Arg Arg Asn Lys Arg Glu Asp Arg Thr Phe Leu Val Gly Asn Leu Glu Ile Arg Glu Arg Arg Leu Phe Asn Leu Asp Val Pro Glu Ser Arg Arg Cys Phe Val Lys Val Arg Ala Tyr Arg Ser Glu Arg Phe Leu 760 Pro Ser Glu Gln Ile Gln Gly Val Val Ile Ser Val Ile Asn Leu Glu Pro Arg Thr Gly Phe Leu Ser Asn Pro Arg Ala Trp Gly Arg 790 Phe Asp Ser Val Ile Thr Gly Pro Asn Gly Ala Cys Val Pro Ala Phe Cys Asp Asp Gln Ser Pro Asp Ala Tyr Ser Ala Tyr Val Leu 815 Ala Ser Leu Ala Gly Glu Glu Leu Gln Ala Val Glu Ser Ser Pro 835

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<212> PRT

<213> Homo sapiens

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Asp Tyr Met Ala Cys Gln Pro Glu Ser Thr Asp Met Thr Lys Tyr
50 55 60

Leu Lys Val Lys Leu Asp Pro Pro Asp Ile Thr Cys Gly Asp Pro 75

Pro Glu Thr Phe Cys Ala Met Gly Asn Pro Tyr Met Cys Asn Asn 80 85 90

Glu Cys Asp Ala Ser Thr Pro Glu Leu Ala His Pro Pro Glu Leu 95 100 105

Met Phe Asp Phe Glu Gly Arg His Pro Ser Thr Phe Trp Gln Ser 110 115

Ala Thr Trp Lys Glu Tyr Pro Lys Pro Leu Gln Val Asn Ile Thr

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Thr	Phe	Glu	Ser	Gly 155	Arg	Pro	Asp	Gln	Met 160	Ile	Leu	Glu	Lys	Ser 165
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Asp	Cys	Leu	Asp	Ala 185	Phe	His	Met	Asp	Pro 190	Lys	Ser	Val	Lys	Asp 195
Leu	Ser	Gln	His	Thr 200	Val	Leu	Glu	Ile	Ile 205	Cys	Thr	Glu	Glu	Tyr 210
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Lys	Asp	Arg	Phe	Ala 230	Leu	Phe	Ala	Gly	Pro 235	Arg	Leu	Arg	Asn	Met 240
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Tyr	Ala	Ile	Ser	Asp 290	Ile	Lys	Val	Arg	Gly 295	Arg	Суѕ	Lys	Cys	Asn 300
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Ile	Gly	Thr	Asn	Val 365		. Asp	Asn	Glu	Leu 370	Leu	. His	Cys	Gln	Asn 375
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Tyr	Thr	Gly	Ile	Leu 395		Glu	Lys	Leu	Arg 400		Glu	Glu	. Ala	Gly 405
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<sup>&</sup>lt;211> 228

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe Leu Glu Thr Leu
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Trp Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys Ile Gly Leu
Ala Ser Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile Ile Gln
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Lys Val Lys Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met Glu
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Cys Ser Leu Glu Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro
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                140
Ala Val Leu Thr Leu Glu Asp Thr Asp Val Ala Asn Gly Val Met
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Asn Gly His Thr Pro Met His Leu Glu Pro Ala Pro Asn Phe Arg
                 170
Met Glu Pro Val Thr Ala Leu Gly Ile Leu Ser Leu Ile Leu Asn
                                                         195
                                     190
                 185
Ile Met Cys Ala Ala Leu Asn Leu Ile Arg Gly Val His Leu Ala
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Glu His Ser Leu Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu Asp
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<210> 136

Gln Thr Ser

<211> 239

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 61, 143, 209

<223> unknown base

<400> 136
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tcattcagaa agtgaagtgg cattttaact atgtaagttc ctntcagatg 150
gagtgcagct tggaaaaaat tcaggaggag ctcaagttgc agcctccagc 200
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<210> 137

<211> 2300

<212> DNA

## <213> Homo sapiens

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ccctttaaaa	cgaggcgggt	ggtgcctgcc	cctttaaggg	cggggcgtcc	150
ggacgactgt	atctgagccc	cagactgccc	cgagtttctg	tcgcaggctg	200
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caacactgta	catcctctgc	cacatcttcc	tgacccgctt	caagaagcct	450
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tcctgccctt	ctccatcatc	agcaatgagg	tgctgctctc	cctgcctcgg	600
aactactaca	tccagtggct	caacggctcc	ctcatccatg	gcctctggaa	650
ccttgttttt	ctcttcccca	acctgtccct	catcttcctc	atgccctttg	700
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<210> 138

<211> 489

<212> PRT

<213> Homo sapiens

<400> 138
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Phe His Glu Arg Ile 20 Arg Glu Cys Ile Ile 25 Ser Thr Leu Leu Phe 20 Ala Thr Leu Tyr Ile Leu Cys His Ile Phe Leu Thr Arg Phe Lys 45
Lys Pro Ala Glu Phe Thr Thr Val Asp Asp Glu Asp Ala Thr Val 60
Asn Lys Ile Ala Leu Glu Leu Cys Thr Phe Thr Leu Ala Ile Ala 75
Leu Gly Ala Val Leu Leu Pro Phe Ser Ile Ile Ser Asn Glu 90
Val Leu Leu Ser Leu Pro Arg Asn Tyr Tyr Ile Gln Trp Leu Asn 105
Gly Ser Leu Ile His Gly Leu Trp Asn Leu Val Phe Leu Phe Pro 120

Asn Leu Ser Leu Ile Phe Leu Met Pro Phe Ala Tyr Phe Phe Thr

				125					130					133
Glu	Ser	Glu	Gly	Phe 140	Ala	Gly	Ser	Arg	Lys 145	Gly	Val	Leu	Gly	Arg 150
Val	Tyr	Glu	Thr	Val 155	Val	Met	Leu	Met	Leu 160	Leu	Thr	Leu	Leu	Val 165
Leu	Gly	Met	Val	Trp 170	Val	Ala	Ser	Ala	Ile 175	Val	Asp	Lys	Asn	Lys 180
Ala	Asn	Arg	Glu	Ser 185	Leu	Tyr	Asp	Phe	Trp 190	Glu	Tyr	Tyr	Leu	Pro 195
Tyr	Leu	Tyr	Ser	Cys 200	Ile	Ser	Phe	Leu	Gly 205	Val	Leu	Leu	Leu	Leu 210
Val	Cys	Thr	Pro	Leu 215	Gly	Leu	Ala	Arg	Met 220	Phe	Ser	Val	Thr	Gly 225
Lys	Leu	Leu	Val	Lys 230	Pro	Arg	Leu	Leu	Glu 235	Asp	Leu	Glu	Glu	Gln 240
Leu	Tyr	Cys	Ser	Ala 245	Phe	Glu	Glu	Ala	Ala 250	Leu	Thr	Arg	Arg	Ile 255
Cys	Asn	Pro	Thr	Ser 260	Cys	Trp	Leu	Pro	Leu 265	Asp	Met	Glu	Leu	Leu 270
His	Arg	Gln	Val	Leu 275	Ala	Leu	Gln	Thr	Gln 280	Arg	Val	Leu	Leu	Glu 285
Lys	Arg	Arg	Lys	Ala 290	Ser	Ala	Trp	Gln	Arg 295	Asn	Leu	Gly	Tyr	Pro 300
Leu	Ala	Met	Leu	Cys 305	Leu	Leu	Val	Leu	Thr 310	Gly	Leu	Ser	Val	Leu 315
Ile	Val	Ala	Ile	His 320	Ile	Leu	Glu	Leu	Leu 325	Ile	Asp	Glu	Ala	Ala 330
Met	Pro	Arg	Gly	Met 335	Gln	Gly	Thr	Ser	Leu 340	Gly	Gln	Val	Ser	Phe 345
Ser	Lys	Leu	Gly	Ser 350	Phe	Gly	Ala	Val	Ile 355	Gln	Val	Val	Leu	Ile 360
Phe	Tyr	Leu	Met	Val 365	Ser	Ser	Val	Val	Gly 370	Phe	Tyr	Ser	Ser	Pro 375
Leu	Phe	Arg	Ser	Leu 380	Arg	Pro	Arg	Trp	His 385	Asp	Thr	Ala	Met	Thr 390
Gln	Ile	Ile	Gly	Asn 395	Cys	Val	Суз	Leu	Leu 400	Val	Leu	Ser	Ser	Ala 405
Leu	Pro	Val	Phe	Ser 410	Arg	Thr	Leu	Gly	Leu 415	Thr	Arg	Phe	Asp	Leu 420
Leu	Gly	Asp	Phe	Gly 425	Arg	Phe	Asn	Trp	Leu 430	Gly	Asn	Phe	Tyr	Ile 435
Val	Phe	Leu	Tyr	Asn	Ala	Ala	Phe	Ala	Gly	Leu	Thr	Thr	Leu	Cys

450 445 440 Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile Arg 460 455 Ala Phe Gly Leu Asp Arg Leu Pro Leu Pro Val Ser Gly Phe Pro Gln Ala Ser Arg Lys Thr Gln His Gln 485 <210> 139 <211> 294 <212> DNA <213> Homo sapiens <220> <221> unsure <222> 53, 57 <223> unknown base <400> 139 ggctgccgag ggaaggcccc ttgggttggt cttggttgct tggcggcggc 50 ggnttentee eegetegtee teecegggee cagaggeace teggetteag 100 tcatgctgag cagagtatgg aagcacctga ctacgaagtg ctatccgtgc 150 gagaacagct attccacgag aggatccgcg agtgtattat atcaacactt 200 ctgtttgcaa cactgtacat cctctgccac atcttcctga cccgcttcaa 250 gaagcctgct gagttcacca cagtggatga tgaagatgcc accg 294 <210> 140 <211> 526 <212> DNA <213> Homo sapiens <220> <221> unsure <222> 197, 349 <223> unknown base <400> 140 gaccgacctt aaagagtggg agcaaaggga ggacagagcc ttttaaaacg 50

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 catcagcaat gaggtgctgc actccc 526
<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 141
 gactgtatct gagccccaga ctgc 24
<210> 142
<211> 20
<212> DNA
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<223> Synthetic oligonucleotide probe
<400> 142
 tcagcaatga ggtgctgctc 20
<210> 143
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 143
 tgaggaagat gagggacagg ttgg 24
 <210> 144
 <211> 50
 <212> DNA
 <213> Artificial Sequence
 <223> Synthetic oligonucleotide probe
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 <210> 145
 <211> 685
 <212> DNA
 <213> Homo sapiens
 <400> 145
  gatgtgctcc ttggagctgg tgtgcagtgt cctgactgta agatcaagtc 50
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  tggtccaggt cttcatgctg ctgtgggtga tattactggt cctggctcct 150
  gtcagtggac agtttgcaag gacacccagg cccattattt tcctccagcc 200
  tccatggacc acagtcttcc aaggagagag agtgaccctc acttgcaagg 250
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<210> 146 <211> 124

<212> PRT

<213> Homo sapiens

<400> 146

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Gln Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro 20 25 30

Trp Thr Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys
35 40 45

Gly Phe Arg Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg
50 55 60

Tyr Leu Gly Lys Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu 65 70 75

Glu Val Gln Glu Ser Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser 80 85 90

Pro Leu Ser Ser Pro Val His Leu Asp Phe Ser Ser Glu Met Gly 95 100 105

Phe Pro His Ala Ala Gln Ala Asn Val Glu Leu Leu Gly Ser Ser 110 115 120

Asp Leu Leu Thr

<210> 147

<211> 1621

<212> DNA

<213> Homo sapiens

<400> 147

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<sup>&</sup>lt;210> 148

<sup>&</sup>lt;211> 358

<sup>&</sup>lt;212> PRT

## <213> Homo sapiens

<400> 148														
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Gly	Val	Pro	Arg	Ser 35	Ala	Ser	Ile	Lys	Asp 40	Ile	Lys	Lys	Ala	Tyr 45
Arg	Lys	Leu	Ala	Leu 50	Gln	Leu	His	Pro	Asp 55	Arg	Asn	Pro	Asp	Asp 60
Pro	Gln	Ala	Gln	Glu 65	Lys	Phe	Gln	Asp	Leu 70	Gly	Ala	Ala	Tyr	Glu 75
Val	Leu	Ser	Asp	Ser 80	Glu	Lys	Arg	Lys	Gln 85	Tyr	Asp	Thr	Tyr	Gly 90
Glu	Glu	Gly	Leu	Lys 95	Asp	Gly	His	Gln	Ser 100	Ser	His	Gly	Asp	Ile 105
Phe	Ser	His	Phe	Phe 110	Gly	Asp	Phe	Gly	Phe 115	Met	Phe	Gly	Gly	Thr 120
Pro	Arg	Gln	Gln	Asp 125	Arg	Asn	Ile	Pro	Arg 130	Gly	Ser	Asp	Ile	Ile 135
Val	Asp	Leu	Glu	Val 140	Thr	Leu	Glu	Glu	Val 145	Tyr	Ala	Gly	Asn	Phe 150
Val	Glu	Val	Val	Arg 155	Asn	Lys	Pro	Val	Ala 160	Arg	Gln	Ala	Pro	Gly 165
Lys	Arg	Lys	Cys	Asn 170	Cys	Arg	Gln	Glu	Met 175	Arg	Thr	Thr	Gln	Leu 180
Gly	Pro	Gly	Arg	Phe 185	Gln	Met	Thr	Gln	Glu 190	Val	Val	Cys	Asp	Glu 195
Cys	Pro	Asn	Val	Lys 200	Leu	Val	Asn	Glu	Glu 205	Arg	Thr	Leu	Glu	Val 210
Glu	Ile	Glu	Pro	Gly 215	Val	Arg	Asp	Gly	Met 220	Glu	Tyr	Pro	Phe	Ile 225
Gly	Glu	Gly	Glu	Pro 230	His	Val	Asp	Gly	Glu 235	Pro	Gly	Asp	Leu	Arg 240
Phe	Arg	Ile	Lys	Val 245	Val	Lys	His	Pro	Ile 250	Phe	Glu	Arg	Arg	Gly 255
Asp	Asp	Leu	Tyr	Thr 260	Asn	Val	Thr	Ile	Ser 265	Leu	Val	Glu	Ser	Leu 270
Val	Gly	Phe	Glu	Met 275	Asp	Ile	Thr	His	Leu 280	Asp	Gly	His	Lys	Val 285
His	Ile	Ser	Arg	Asp 290	Lys	Ile	Thr	Arg	Pro 295	Gly	Ala	Lys	Leu	Trp 300

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Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Ile Lys
                 305
Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
Leu Thr Glu Glu Ala Arg Glu Gly Ile Lys Gln Leu Leu Lys Gln
Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
                                     355
<210> 149
<211> 509
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 34, 52, 134, 142, 155, 158, 196, 217, 228, 272, 347, 410, 445,
      482
<223> unknown base
<400> 149
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 gacceggaca gaggaaccat ggttccgcag aacntgagca cnttttgcct 150
 qttqntqnta tacttcatcg gggcggtgat tgccggacga gatttntata 200
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 acaagcccag gagaaattcc aggatttggg tgctgcttat gaggttntgt 350
 cagatagtga gaaacggaaa cagtacgata attatggtga agaaggatta 400
 aaagatggtn atcagagctc ccatggagac atttttcac acttntttgg 450
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<211> 1532
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<213> Homo sapiens
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 ctcttcccca atttgccact tccagcagct ttagcccatg aggaggatgt 150
 gaccgggact gagtcaggag ccctctggaa gcatggagac tgtggtgatt 200
 gttgccatag gtgtgctggc caccatcttt ctggcttcgt ttgcagcctt 250
 ggtgctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300
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<210> 151
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Phe Leu Ala Ser Phe Ala Ala Leu Val Leu Val Cys Arg Gln Arg 20 25 30

Tyr Cys Arg Pro Arg Asp Leu Leu Gln Arg Tyr Asp Ser Lys Pro

<sup>&</sup>lt;211> 226

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 151

Met Glu Thr Val Val Ile Val Ala Ile Gly Val Leu Ala Thr Ile
1 5 10 15

				35					40					45
Ile	Val	Asp	Leu	Ile 50	Gly	Ala	Met	Glu	Thr 55	Gln	Ser	Glu	Pro	Ser 60

Glu Leu Glu Leu Asp Asp Val Val Ile Thr Asn Pro His Ile Glu  $65 \ 70 \ 75$ 

Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp Ala Ser Gly Leu 80 85 90

Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His Thr Leu Thr 95 100 105

Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys Met Lys 110 115

Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg Ile 125 130 135

Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu 140 145 150

Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser 155 160 165

Val Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr 170 175 180

Gly Gly Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu 185 190 195

His Leu Glu Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp 200 205 210

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Arg	Ser	Gly	Ser	Ser 335	Leu	Thr	Leu	Ala	Ser 340	Phe	Ile	Leu	Val	Phe 345
Phe	Val	Ala	Ser	Val 350	Gly	Val	Arg	Trp	Met 355	Ile	Gly	Val	Thr	Glu 360
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<213> Homo sapiens

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<213> Homo sapiens

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Thr Asp Ser Gln Met Asp Asp Val Glu Val Val Tyr Thr Ile Asp 50 55

Ile Gln Lys Tyr Ile Pro Cys Tyr Gln Leu Phe Ser Phe Tyr Asn 65 70 75

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Asn Val Lys Lys Asn Val Val Gly Trp Tyr Lys Phe Arg Arg His 95 100 105

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His	Ser	Leu	Tyr	Lys 155	Pro	Gln	Lys	Gly	Leu 160	Phe	His	Arg	Val	Pro 165
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Thr	Phe	Phe	Pro	Asn 290	Ser	Glu	Phe	Leu	His 295	Ser	Cys	Val	Met	Ser 300
Leu	Lys	Asn	Arg	His 305	Val	Ser	Lys	Ser	Ser 310	Cys	Asn	Tyr	Asn	His 315
His	Leu	Asp	Val	Val 320	Asp	Asn	Leu	Thr	Leu 325	Met	Val	Glu	His	Thr 330
Asp	Ile	Pro	Glu	Ala 335		Pro	Ala	Ser	Thr 340		Gln	Ile	Ile	Lys 345
His	Lys	Ala	Leu	Asp 350		Asp	Asp	Arg	Trp 355	Gln	Phe	Lys	Arg	Ser 360
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Ser	Ser	Asn	Gln	Asp 380		Ala	Ser	Lys	Met 385	Ser	Ser	Pro	Glu	Thr 390
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c 2651
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Ser Glu Val Arg Arg Leu Tyr Val Ser Lys Gly Phe Asn Lys Asn

<sup>&</sup>lt;210> 160

<sup>&</sup>lt;211> 556

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 160

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35 40 45

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				350					355					360
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Glu	Lys	Leu	Lys	Gln 395	Ala	Lys	Lys	Phe	Trp 400	Ser	Ser	Leu	Pro	Ser 405
Asn	Val	Cys	Asn	Asp 410	Glu	Arg	Met	Ala	Ala 415	Gly	Asn	Gly	Asn	Glu 420
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Val	Thr	Gly	Asn	Gly 440	Leu	Ala	Asn	Gln	Gly 445	Asn	Asn	Pro	Glu	Val 450
Gln	Val	Asp	Thr	Ser 455	Lys	Pro	Asp	Ile	Leu 460	Ile	Leu	Arg	Gln	Ile 465
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 ggaccgaggc caggcttcta ggagatggct ccaggaaggc ggccaagaat 300
 gtgagtgcaa agattggttc ctgagagccc cgagaagaaa attcatgaca 350
 gtgtctgggc tgccaaagaa gcagtgcccc tgtgatcatt tcaagggcaa 400
 tgtgaagaaa acaagacacc aaaggcacca cagaaagcca aacaagcatt 450
 ccagagcctg ccagcaattt ctcaaacaat gtcagctaag aagctttgct 500
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 ctgaaagatt ccaggaaact gtagcttcct agctagtgtc atttaacctt 800
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  tcaaaaaaaa aaaaaaaaaa 870
 <210> 165
 <211> 119
 <212> PRT
 <213> Homo sapiens
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<sup>&</sup>lt;400> 165

Met Lys Val Leu Ile Ser Ser Leu Leu Leu Leu Pro Leu Met

<210> 166 <211> 551 <212> DNA

<213> Homo sapiens

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<210> 167 <211> 87

<212> PRT

<213> Homo sapiens

<400> 167
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Val Leu Phe Leu Thr Cys Tyr Ala Asp Asp Lys Pro Asp Lys Pro

-

20 25 30

Asp Asp Lys Pro Asp Asp Ser Gly Lys Asp Pro Lys Pro Asp Phe 35 40 45

Pro Lys Phe Leu Ser Leu Leu Gly Thr Glu Ile Ile Glu Asn Ala 50 55 60

Val Glu Phe Ile Leu Arg Ser Met Ser Arg Ser Thr Gly Phe Met  $65 \\ 70 \\ 75$ 

Glu Phe Asp Asp Asn Glu Gly Lys His Ser Ser Lys 80 85

<210> 168

<211> 1371

<212> DNA

<213> Homo sapiens

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<210> 169

<211> 277

<212> PRT

<213> Homo sapiens

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Gly Ser Met Asp Val Val Cys Thr Leu Val Leu Cys Ser Val

Pro Gly Gly Val Leu Phe Phe Trp Glu His Val Ala Glu Pro Tyr 175 170

Gly Ser Trp Ala Phe Met Trp Gln Gln Val Phe Glu Pro Thr Trp 195 190

Lys His Ile Gly Asp Gly Cys Cys Leu Thr Arg Glu Thr Trp Lys

Asp Leu Glu Asn Ala Gln Phe Ser Glu Ile Gln Met Glu Arg Gln 220 225 215

Pro Pro Pro Leu Lys Trp Leu Pro Val Gly Pro His Ile Met Gly 230

Lys Ala Val Lys Gln Ser Phe Pro Ser Ser Lys Ala Leu Ile Cys 255

Ser Phe Pro Ser Leu Gln Leu Glu Gln Ala Thr His Gln Pro Ile 260

Tyr Leu Pro Leu Arg Gly Thr 275

<210> 170 <211> 1621 <212> DNA <213> Homo sapiens

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<210> 171 <211> 371

<212> PRT

<213> Homo sapiens

<400> 171 Met Ser Phe Arg Lys Val Asn Ile Ile Ile Leu Val Leu Ala Val Ala Leu Phe Leu Leu Val Leu His His Asn Phe Leu Ser Leu Ser 20 Ser Leu Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp 60 Gly Arg Gln Glu Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp Arg Leu Gly Gly Ala Ile Ala Ala Ile Asn Ser Ile Gln His Asn Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr 105 Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser 115 Ile Arg Tyr Lys Ile Val Asn Phe Asp Pro Lys Leu Leu Glu Gly 135 125 130 Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu 150 Thr Phe Ala Arg Phe Tyr Leu Pro Ile Leu Val Pro Ser Ala Lys Lys Ala Ile Tyr Met Asp Asp Val Ile Val Gln Gly Asp Ile Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala

195 190 185 Phe Ser Glu Asp Cys Asp Ser Ala Ser Thr Lys Val Val Ile Arg Gly Ala Gly Asn Gln Tyr Asn Tyr Ile Gly Tyr Leu Asp Tyr Lys Lys Glu Arg Ile Arg Lys Leu Ser Met Lys Ala Ser Thr Cys Ser 235 Phe Asn Pro Gly Val Phe Val Ala Asn Leu Thr Glu Trp Lys Arg 245 Gln Asn Ile Thr Asn Gln Leu Glu Lys Trp Met Lys Leu Asn Val 265 Glu Glu Gly Leu Tyr Ser Arg Thr Leu Ala Gly Ser Ile Thr Thr 285 Pro Pro Leu Leu Ile Val Phe Tyr Gln Gln His Ser Thr Ile Asp 290 Pro Met Trp Asn Val Arg His Leu Gly Ser Ser Ala Gly Lys Arg 305 Tyr Ser Pro Gln Phe Val Lys Ala Ala Lys Leu Leu His Trp Asn 330 Gly His Leu Lys Pro Trp Gly Arg Thr Ala Ser Tyr Thr Asp Val 345 Trp Glu Lys Trp Tyr Ile Pro Asp Pro Thr Gly Lys Phe Asn Leu 350 Ile Arg Arg Tyr Thr Glu Ile Ser Asn Ile Lys 365 <210> 172 <211> 585 <212> DNA <213> Homo sapiens <220> <221> unsure <222> 71, 76, 86, 91, 162, 220, 269, 281 <223> unknown base <400> 172 tggtttttgc cccataaatt ccctcagctt gagcagtttg ttaaggaatg 50 aggttacaga ttcaggaatt ntaggncctc aacctntaga ntttgtccca 100 aatgttctcc gacatgcagt agatgggaga caagaggaga ttcctgtggt 150 categetgea tntgaagaca ggettggggg ggccattgea getataaaca 200 gcattcagca caacactcgn tccaatgtga ttttctacat tgttactctc 250

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aagcatcaga tacaaaattg tcaattttga ccctaaactt ttggaaggaa 350

aagtaaagga ggatcctgac cagggggaat ccatgaaacc tttaaccttt 400 gcaaggttct acttgccaat tctggttccc agcgcaaaga aggccatata 450 catggatgat gatgtaattg tgcaaggtga tattcttgcc ctttacaata 500 cagcactgaa gccaggacat gcagctgcat tttcagaaga ttgtgattca 550 gcctctacta aagttgtcat ccgtggagca ggaaa 585

<210> 173

<211> 1866

<212> DNA

<213> Homo sapiens

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<210> 174

<211> 823

<212> DNA

<213> Homo sapiens

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<210> 175

<211> 87

<212> PRT

<213> Homo sapiens

<400> 175

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Asn Gly Leu Val Gly Phe Leu Leu Leu Leu Leu Trp Val Ile Leu 20 25 30

Cys Trp Ala Cys His Ser Arg Leu Pro Thr Leu Thr Leu Ser Leu 35 40 45

Asn Pro Val Pro Thr Pro Ala Leu Ala Pro Val Leu Arg Arg Pro 50 55 60

His His Pro Arg Ser Pro Ala Met Lys Ala Ala Thr Cys Cys Ser
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Pro Glu Gly Pro Trp Pro Ser Leu Glu Pro Arg Thr 80 85

<210> 176

<211> 1660

<212> DNA

<213> Homo sapiens

<400> 176

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cgtgccagca aatgactata gctggggcag tggttacttg ttatttcaac 800 agaagtaaaa atgateetee tgateateee ateetttegt eteteteeat 850 tctcttcttc taccatcaag gaaccgttgt gaaagggtca tttttaatct 900 ctgtggtgag gattccgaga atcattgtca tgtacatgca aaacgcactg 950 aaaqaacaqc agcatggtgc attgtccagg tacctgttcc gatgctgcta 1000 ctgctgtttc tggtgtcttg acaaatacct gctccatctc aaccagaatg 1050 catatactac aactgctatt aatgggacag atttctgtac atcagcaaaa 1100 gatgcattca aaatcttgtc caagaactca agtcacttta catctattaa 1150 ctgctttgga gacttcataa tttttctagg aaaggtgtta gtggtgtgtt 1200 tcactgtttt tggaggactc atggctttta actacaatcg ggcattccag 1250 gtgtgggcag tccctctgtt attggtagct ttttttgcct acttagtagc 1300 ccatagtttt ttatctgtgt ttgaaactgt gctggatgca cttttcctgt 1350 gttttgctgt tgatctggaa acaaatgatg gatcgtcaga aaagccctac 1400 tttatggatc aagaatttct gagtttcgta aaaaggagca acaaattaaa 1450 caatgcaagg gcacagcagg acaagcactc attaaggaat gaggagggaa 1500 cagaactcca ggccattgtg agatagatac ccatttaggt atctgtacct 1550 ggaaaacatt toottotaag agocatttac agaatagaag atgagaccac 1600 tagagaaaag ttagtgaatt ttttttaaa agacctaata aaccctattc 1650 ttcctcaaaa 1660

<210> 177 <211> 445

<212> PRT

<213> Homo sapiens

<400> 177

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Leu Leu Val His Ile Phe Ile Ser Leu Val Ile Leu Gly Leu Leu 45 35

Phe Val Cys Gly Val Leu Trp Trp Leu Tyr Tyr Asp Tyr Thr Asn

Asp Leu Ser Ile Glu Leu Asp Thr Glu Arg Glu Asn Met Lys Cys

Val Leu Gly Phe Ala Ile Val Ser Thr Gly Ile Thr Ala Val Leu

Leu Val Leu Ile Phe Val Leu Arg Lys Arg Ile Lys Leu Thr Val

				95					100					105
Glu	Leu	Phe	Gln	Ile 110	Thr	Asn	Lys	Ala	Ile 115	Ser	Ser	Ala	Pro	Phe 120
Leu	Leu	Phe	Gln	Pro 125	Leu	Trp	Thr	Phe	Ala 130	Ile	Leu	Ile	Phe	Phe 135
Trp	Val	Leu	Trp	Val 140	Ala	Val	Leu	Leu	Ser 145	Leu	Gly	Thr	Ala	Gly 150
Ala	Ala	Gln	Val	Met 155	Glu	Gly	Gly	Gln	Val 160	Glu	Tyr	Lys	Pro	Leu 165
Ser	Gly	Ile	Arg	Tyr 170	Met	Trp	Ser	Tyr	His 175	Leu	Ile	Gly	Leu	Ile 180
Trp	Thr	Ser	Glu	Phe 185	Ile	Leu	Ala	Cys	Gln 190	Gln	Met	Thr	Ile	Ala 195
Gly	Ala	Val	Val	Thr 200	Cys	Tyr	Phe	Asn	Arg 205	Ser	Lys	Asn	Asp	Pro 210
Pro	Asp	His	Pro	Ile 215	Leu	Ser	Ser	Leu	Ser 220	Ile	Leu	Phe	Phe	Tyr 225
His	Gln	Gly	Thr	Val 230	Val	Lys	Gly	Ser	Phe 235	Leu	Ile	Ser	Val	Val 240
Arg	Ile	Pro	Arg	Ile 245	Ile	Val	Met	Tyr	Met 250	Gln	Asn	Ala	Leu	Lys 255
Glu	Gln	Gln	His	Gly 260	Ala	Leu	Ser	Arg	Tyr 265	Leu	Phe	Arg	Cys	Cys 270
Tyr	Cys	Cys	Phe	Trp 275	Cys	Leu	Asp	Lys	Tyr 280	Leu	Leu	His	Leu	Asn 285
Gln	Asn	Ala	Tyr	Thr 290	Thr	Thr	Ala	Ile	Asn 295	Gly	Thr	Asp	Phe	Cys 300
				305					310				Ser	315
His	Phe	Thr	Ser	Ile 320		Суѕ	Phe	Gly	Asp 325	Phe	Ile	Ile	Phe	Leu 330
Gly	Lys	Val	Leu	Val 335		Cys	Phe	Thr	Val 340	Phe	Gly	Gly	Leu	Met 345
Ala	Phe	Asn	Tyr	Asn 350		Ala	Phe	Gln	Val 355	Trp	Ala	Val	Pro	Leu 360
Leu	Leu	. Val	Ala	Phe 365		Ala	Tyr	Leu	Val 370	Ala	His	Ser	Phe	Leu 375
Ser	Val	Phe	Glu	Thr 380		Leu	Asp	Ala	Leu 385	Phe	Leu	Cys	Phe	Ala 390
Val	Asp	Leu	Glu	Thr 395		Asp	Gly	Ser	Ser 400	Glu	Lys	Pro	Tyr	Phe 405
Met	Asp	Gln	Glu	Phe	Leu	Ser	Phe	· Val	Lys	Arg	Ser	Asn	Lys	Leu

410 415 420

Asn Asn Ala Arg Ala Gln Gln Asp Lys His Ser Leu Arg Asn Glu 425 430 435

Glu Gly Thr Glu Leu Gln Ala Ile Val Arg  $440 \hspace{1cm} \text{Ala} \hspace{0.1cm} \text{Ale} \hspace{0.1cm} \text{Val} \hspace{0.1cm} \text{Arg}$ 

<210> 178

<211> 2773

<212> DNA

<213> Homo sapiens

<400> 178

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Leu	Met	Gly	Val	Val 335	Gln	Tyr	Gly	Asp	Asn 340	Pro	Ala	Thr	His	Phe 345
Asn	Leu	Lys	Thr	His 350	Thr	Asn	Ser	Arg	Asp 355	Leu	Lys	Thr	Ala	Ile 360
Glu	Lys	Ile	Thr	Gln 365	Arg	Gly	Gly	Leu	Ser 370	Asn	Val	Gly	Arg	Ala 375
Ile	Ser	Phe	Val	Thr 380	Lys	Asn	Phe	Phe	Ser 385	Lys	Ala	Asn	Gly	Asn 390
Arg	Ser	Gly	Ala	Pro 395	Asn	Val	Val	Val	Val 400	Met	Val	Asp	Gly	Trp 405
Pro	Thr	Asp	Lys	Val 410	Glu	Glu	Ala	Ser	Arg 415	Leu	Ala	Arg	Glu	Ser 420
Gly	Ile	Asn	Ile	Phe 425	Phe	Ile	Thr	Ile	Glu 430	Gly	Ala	Ala	Glu	Asn 435
Glu	Lys	Gln	Tyr	Val 440	Val	Glu	Pro	Asn	Phe 445	Ala	Asn	Lys	Ala	Val 450
Cys	Arg	Thr	Asn	Gly 455	Phe	Tyr	Ser	Leu	His 460	Val	Gln	Ser	Trp	Phe 465
Gly	Leu	His	Lys	Thr 470	Leu	Gln	Pro	Leu	Val 475	Lys	Arg	Val	Cys	Asp 480
Thr	Asp	Arg	Leu	Ala 485	Cys	Ser	Lys	Thr	Cys 490	Leu	Asn	Ser	Ala	Asp 495
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Phe	Arg	Thr	Val	Leu 515	Gln	Phe	Val	Thr	Asn 520	Leu	Thr	Lys	Glu	Phe 525
Glu	Ile	Ser	Asp	Thr 530	Asp	Thr	Arg	Ile	Gly 535	Ala	Val	Gln	Tyr	Thr 540
Tyr	Glu	Gln	Arg	Leu 545	Glu	Phe	Gly	Phe	Asp 550	Lys	Tyr	Ser	Ser	Lys 555
Pro	Asp	Ile	Leu	Asn 560	Ala	Ile	Lys	Arg	Val 565	Gly	Tyr	Trp	Ser	Gly 570
Gly	Thr	Ser	Thr	Gly 575	Ala	Ala	Ile	Asn	Phe 580	Ala	Leu	Glu	Gln	Leu 585
Phe	Lys	Lys	Ser	Lys 590	Pro	Asn	Lys	Arg	Lys 595	Leu	Met	Ile	Leu	Ile 600
Thr	Asp	Gly	Arg	Ser	Tyr	Asp	Asp	Val	Arg	Ile	Pro	Ala	Met	Ala

Ala His Leu Lys Gly Val Ile Thr Tyr Ala Ile Gly Val Ala Trp 630

Ala Ala Gln Glu Glu Leu Glu Val Ile Ala Thr His Pro Ala Arg 645

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Val Pro Arg Ile Ile Gln Asn Ile Cys Thr Glu Phe Asn Ser Gln 675

Pro Arg Asn

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<213> Homo sapiens

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Pro	Val	Thr	Cys	Thr 155	Ala	Gly	Ile	Gly	Thr 160	Phe	Ile	Val	Glu	Phe 165
Ala	Thr	Leu	Ser	Ser 170	Leu	Thr	Gly	Asp	Pro 175	Val	Phe	Glu	Asp	Val 180
Ala	Arg	Val	Ala	Leu 185	Met	Arg	Leu	Trp	Glu 190	Ser	Arg	Ser	Asp	Ile 195
Gly	Leu	Val	Gly	Asn 200	His	Ile	Asp	Val	Leu 205	Thr	Gly	Lys	Trp	Val 210
Ala	Gln	Asp	Ala	Gly 215	Ile	Gly	Ala	Gly	Val 220	Asp	Ser	Tyr	Phe	Glu 225
Tyr	Leu	Val	Lys	Gly 230	Ala	Ile	Leu	Leu	Gln 235	Asp	Lys	Lys	Leu	Met 240
Ala	Met	Phe	Leu	Glu 245	Tyr	Asn	Lys	Ala	Ile 250	Arg	Asn	Tyr	Thr	Arg 255
Phe	Asp	Asp	Trp	Tyr 260	Leu	Trp	Val	Gln	Met 265	Tyr	Lys	Gly	Thr	Val 270
Ser	Met	Pro	Val	Phe 275	Gln	Ser	Leu	Glu	Ala 280	Tyr	Trp	Pro	Gly	Leu 285
Gln	Ser	Leu	Ile	Gly 290	Asp	Ile	Asp	Asn	Ala 295	Met	Arg	Thr	Phe	Leu 300
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Tyr	Asn	Ile	Pro	Gln 320	Gly	Tyr	Thr	Val	Glu 325	Lys	Arg	Glu	Gly	Tyr 330
Pro	Leu	Arg	Pro	Glu 335	Leu	Ile	Glu	Ser	Ala 340	Met	Tyr	Leu	Tyr	Arg 345
Ala	Thr	Gly	Asp	Pro 350	Thr	Leu	Leu	Glu	Leu 355	Gly	Arg	Asp	Ala	Val 360
Glu	Ser	Ile	Glu	Lys 365	Ile	Ser	Lys	Val	Glu 370	Суз	Gly	Phe	Ala	Thr 375
Ile	Lys	Asp	Leu	Arg 380	Asp	His	Lys	Leu	Asp 385	Asn	Arg	Met	Glu	Ser 390
Phe	Phe	Leu	Ala	Glu 395	Thr	Val	Lys	Tyr	Leu 400	Tyr	Leu	Leu	Phe	Asp 405
Pro	Thr	Asn	Phe	Ile 410	His	Asn	Asn	Gly	Ser 415		Phe	Asp	Ala	Val 420
Ile	Thr	Pro	Tyr	Gly 425	Glu	Cys	Ile	Leu	Gly 430		Gly	Gly	Tyr	Ile 435
Phe	Asn	Thr	Glu	Ala	His	Pro	Ile	Asp	Leu	Ala	Ala	Leu	His	Cys

				440					445					450
Cys	Gln	Arg	Leu	Lys 455	Glu	Glu	Gln	Trp	Glu 460	Val	Glu	Asp	Leu	Met 465
Arg	Glu	Phe	Tyr	Ser 470	Leu	Lys	Arg	Ser	Arg 475	Ser	Lys	Phe	Gln	Lys 480
Asn	Thr	Val	Ser	Ser 485	Gly	Pro	Trp	Glu	Pro 490	Pro	Ala	Arg	Pro	Gly 495
Thr	Leu	Phe	Ser	Pro 500	Glu	Asn	His	Asp	Gln 505	Ala	Arg	Glu	Arg	Lys 510
Pro	Ala	Lys	Gln	Lys 515	Val	Pro	Leu	Leu	Ser 520	Cys	Pro	Ser	Gln	Pro 525
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Ser

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<213> Homo sapiens

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 Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser
 Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro
 Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
 Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser
 Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala
 Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
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                                      115
 Thr Ser Ala Trp Ser Ile Leu Lys His Pro Phe Asn Arg Asn Ser
 Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe
 His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe
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 Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val
                                      175
 Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met
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 Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys
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 Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu
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220

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Val Gly Phe Met Leu Ile Leu Val Val Pro Leu Phe Val Trp
Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val
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                                    265
Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile
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<223> Synthetic oligonucleotide probe
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<210> 188
<211> 1227
<212> DNA
<213> Homo sapiens
<400> 188
 cggacgcgtg ggccgccacc tccggaacaa gccatggtgg cggcgacggt 50
 ggcagcggcg tggctgctcc tgtgggctgc ggcctgcgcg cagcaggagc 100
 aggacttcta cgacttcaag gcggtcaaca tccggggcaa actggtgtcg 150
 ctggagaagt accgcggatc ggtgtccctg gtggtgaatg tggccagcga 200
 gtgcggcttc acagaccagc actaccgagc cctgcagcag ctgcagcgag 250
 acctgggccc ccaccacttt aacgtgctcg ccttcccctg caaccagttt 300
 ggccaacagg agcctgacag caacaaggag attgagagct ttgcccgccg 350
 cacctacagt gtctcattcc ccatgtttag caagattgca gtcaccggta 400
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 cccacctgga acttctggaa gtacctagta gccccagatg gaaaggtggt 500
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 cagcgctcgt gaggaagctc atcctactga agcgagaaga cttataacca 600
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tcctttactc ttatgccatt ggtcccatca ttcttgtggg ggaaaaattc 750
tagtattttg attatttgaa tcttacagca acaaatagga actcctggcc 800
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caataaaaac ttgcatccaa catgaattc cagccgatga taatccaggc 1100
caaaggttta gttgttgt tttcctctgt attatttct tcattacaaa 1150
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<210> 189

<211> 187

<212> PRT

<213> Homo sapiens

 Adob 189
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 Ala Ala Cys Ala Gln 20
 Gln Glu Gln Asp Phe Tyr Asp Phe Lys Ala 30

 Val Asn Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly 45

 Ser Val Ser Leu Val Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr 50

 Asp Gln His Tyr Arg 65
 Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly 70

 Pro His His Phe Asn 80
 Val Leu Ala Phe Pro Cys Asn Gln Phe Gly 90

 Gln Gln Glu Pro Asp 95
 Ser Asn Lys Glu Ile Glu Ser Phe Ala Arg 105

 Arg Thr Tyr Ser Val 125
 Ser Phe Pro Met Phe Ser Lys Ile Ala Val 120

 Thr Gly Thr Gly Ala His Pro Ala Phe Lys Tyr Leu Ala Gln Thr 135

 Ser Gly Lys Glu Pro Thr Trp Asn Phe Trp Lys Tyr Leu Val Ala 150

 Pro Asp Gly Lys Val Val Gly Ala Trp Asp Pro Thr Val Ser Val

155 160 165

Glu Glu Val Arg Pro Gln Ile Thr Ala Leu Val Arg Lys Leu Ile
170 175 180

Leu Leu Lys Arg Glu Asp Leu 185

- <210> 190
- <211> 24
- <212> DNA <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 190

gcaggacttc tacgacttca aggc 24

- <210> 191
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 191

agtctgggcc aggtacttga aggc 24

- <210> 192
- <211> 50
- <212> DNA
- <213> Artificial Sequence
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- <223> Synthetic oligonucleotide probe
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- <210> 193
- <211> 2187
- <212> DNA
- <213> Homo sapiens
- <400> 193

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ctgggggccc gggccgccct ctctcggagt tggcaggaag ccaggttgca 150

gggtgtccgc ttcctcagtt ccagagaggt ggatcgcatg gtctccacgc 200

ccatcggagg cctcagctac gttcaggggt gcaccaaaaa gcatcttaac 250

agcaagactg tgggccagtg cctggagacc acagcacaga gggtcccaga 300

acgagaggcc ttggtcgtcc tccatgaaga cgtcaggttg acctttgccc 350

aactcaagga ggaggtggac aaagctgctt ctggcctcct gagcattggc 400

ctctgcaaag gtgaccggct gggcatgtgg ggacctaact cctatgcatg 450 ggtgctcatg cagttggcca ccgcccaggc gggcatcatt ctggtgtctg 500 tgaacccagc ctaccaggct atggaactgg agtatgtcct caagaaggtg 550 ggctgcaagg cccttgtgtt ccccaagcaa ttcaagaccc agcaatacta 600 caacgtcctg aagcagatct gtccagaagt ggagaatgcc cagccagggg 650 ccttgaagag tcagaggctc ccagatctga ccacagtcat ctcggtggat 700 gcccctttgc cggggaccct gctcctggat gaagtggtgg cggctggcag 750 cacacggcag catctggacc agctccaata caaccagcag ttcctgtcct 800 gccatgaccc catcaacatc cagttcacct cggggacaac aggcagcccc 850 aagggggcca ccctctccca ctacaacatt gtcaacaact ccaacatttt 900 aggagagcgc ctgaaactgc atgagaagac accagagcag ttgcggatga 950 tcctgcccaa cccctgtac cattgcctgg gttccgtggc aggcacaatg 1000 atgtgtctga tgtacggtgc caccctcatc ctggcctctc ccatcttcaa 1050 tggcaagaag gcactggagg ccatcagcag agagagaggc accttcctgt 1100 atggtacccc cacgatgttc gtggacattc tgaaccagcc agacttctcc 1150 agttatgaca tctcgaccat gtgtggaggt gtcattgctg ggtcccctgc 1200 acctccagag ttgatccgag ccatcatcaa caagataaat atgaaggacc 1250 tggtggttgc ttatggaacc acagagaaca gtcccgtgac attcgcgcac 1300 ttccctgagg acactgtgga gcagaaggca gaaagcgtgg gcagaattat 1350 gcctcacacg gaggcccgga tcatgaacat ggaggcaggg acgctggcaa 1400 agctgaacac gcccggggag ctgtgcatcc gagggtactg cgtcatgctg 1450 ggctactggg gtgagcctca gaagacagag gaagcagtgg atcaggacaa 1500 gtggtattgg acaggagatg tcgccacaat gaatgagcag ggcttctgca 1550 agatcgtggg ccgctctaag gatatgatca tccggggtgg tgagaacatc 1600 taccccgcag agetcgagga ettettteae acacacccga aggtgcagga 1650 agtgcaggtg gtgggagtga aggacgatcg gatgggggaa gagatttgtg 1700 cctgcattcg gctgaaggac ggggaggaga ccacggtgga ggagataaaa 1750 getttetgea aagggaagat eteteaette aagatteega agtacategt 1800 gtttgtcaca aactaccccc tcaccatttc aggaaagatc cagaaattca 1850 aacttcgaga gcagatggaa cgacatctaa atctgtgaat aaagcagcag 1900 gcctgtcctg gccggttggc ttgactctct cctgtcagaa tgcaacctgg 1950 ctttatgcac ctagatgtcc ccagcaccca gttctgagcc aggcacatca 2000

aatgtcaagg aattgactga acgaactaag agctcctgga tgggtccggg 2050 aactcgcctg ggcacaaggt gccaaaaggc aggcagcctg cccaggccct 2100 ccctcctgtc catccccac attcccctgt ctgtccttgt gatttggcat 2150 aaagagcttc tgttttcttt gaaaaaaaa aaaaaaa 2187

<210> 194

<211> 615

<212> PRT

<213> Homo sapiens

<400> 194 Met Ala Val Tyr Val Gly Met Leu Arg Leu Gly Arg Leu Cys Ala Gly Ser Ser Gly Val Leu Gly Ala Arg Ala Ala Leu Ser Arg Ser Trp Gln Glu Ala Arg Leu Gln Gly Val Arg Phe Leu Ser Ser Arg Glu Val Asp Arg Met Val Ser Thr Pro Ile Gly Gly Leu Ser Tyr Val Gln Gly Cys Thr Lys Lys His Leu Asn Ser Lys Thr Val Gly Gln Cys Leu Glu Thr Thr Ala Gln Arg Val Pro Glu Arg Glu Ala 85 Leu Val Val Leu His Glu Asp Val Arg Leu Thr Phe Ala Gln Leu Lys Glu Glu Val Asp Lys Ala Ala Ser Gly Leu Leu Ser Ile Gly 120 110 Leu Cys Lys Gly Asp Arg Leu Gly Met Trp Gly Pro Asn Ser Tyr 130 Ala Trp Val Leu Met Gln Leu Ala Thr Ala Gln Ala Gly Ile Ile 140 Leu Val Ser Val Asn Pro Ala Tyr Gln Ala Met Glu Leu Glu Tyr 165 155 Val Leu Lys Lys Val Gly Cys Lys Ala Leu Val Phe Pro Lys Gln 175 Phe Lys Thr Gln Gln Tyr Tyr Asn Val Leu Lys Gln Ile Cys Pro 195 185 190 Glu Val Glu Asn Ala Gln Pro Gly Ala Leu Lys Ser Gln Arg 210 200

Pro Asp Leu Thr Thr Val Ile Ser Val Asp Ala Pro Leu Pro Gly

Thr Leu Leu Leu Asp Glu Val Val Ala Ala Gly Ser Thr Arg Gln

His Leu Asp Gln Leu Gln Tyr Asn Gln Gln Phe Leu Ser Cys His

215

220

				245					250					255
Asp	Pro	Ile	Asn	Ile 260	Gln	Phe	Thr	Ser	Gly 265	Thr	Thr	Gly	Ser	Pro 270
Lys	Gly	Ala	Thr	Leu 275	Ser	His	Tyr	Asn	Ile 280	Val	Asn	Asn	Ser	Asn 285
Ile	Leu	Gly	Glu	Arg 290	Leu	Lys	Leu	His	Glu 295	Lys	Thr	Pro	Glu	Gln 300
Leu	Arg	Met	Ile	Leu 305	Pro	Asn	Pro	Leu	Tyr 310	His	Cys	Leu	Gly	Ser 315
Val	Ala	Gly	Thr	Met 320	Met	Cys	Leu	Met	Tyr 325	Gly	Ala	Thr	Leu	Ile 330
Leu	Ala	Ser	Pro	Ile 335	Phe	Asn	Gly	Lys	Lys 340	Ala	Leu	Glu	Ala	Ile 345
Ser	Arg	Glu	Arg	Gly 350	Thr	Phe	Leu	Tyr	Gly 355	Thr	Pro	Thr	Met	Phe 360
Val	Asp	Ile	Leu	Asn 365	Gln	Pro	Asp	Phe	Ser 370	Ser	Tyr	Asp	Ile	Ser 375
Thr	Met	Cys	Gly	Gly 380	Val	Ile	Ala	Gly	Ser 385	Pro	Ala	Pro	Pro	Glu 390
Leu	Ile	Arg	Ala	Ile 395	Ile	Asn	Lys	Ile	Asn 400	Met	Lys	Asp	Leu	Val 405
Val	Ala	Tyr	Gly	Thr 410	Thr	Glu	Asn	Ser	Pro 415	Val	Thr	Phe	Ala	His 420
Phe	Pro	Glu	Asp	Thr 425	Val	Glu	Gln	Lys	Ala 430	Glu	Ser	Val	Gly	Arg 435
Ile	Met	Pro	His	Thr 440	Glu	Ala	Arg	Ile	Met 445	Asn	Met	Glu	Ala	Gly 450
Thr	Leu	Ala	Lys	Leu 455	Asn	Thr	Pro	Gly	Glu 460	Leu	Суз	Ile	Arg	Gly 465
Tyr	Суз	Val	Met	Leu 470	Gly	Tyr	Trp	Gly	Glu 475	Pro	Gln	Lys	Thr	Glu 480
Glu	Ala	Val	Asp	Gln 485	Asp	Lys	Trp	Tyr	Trp 490	Thr	Gly	Asp	Val	Ala 495
Thr	Met	Asn	Glu	Gln 500	Gly	Phe	Cys	Lys	Ile 505	Val	Gly	Arg	Ser	Lys 510
Asp	Met	Ile	Ile	Arg 515	Gly	Gly	Glu	Asn	Ile 520	Tyr	Pro	Ala	Glu	Leu 525
Glu	Asp	Phe	Phe	His 530	Thr	His	Pro	Lys	Val 535	Gln	Glu	Val	Gln	Val 540
Val	Gly	Val	Lys	Asp 545		Arg	Met	Gly	Glu 550	Glu	Ile	Cys	Ala	Cys 555
Ile	Arg	Leu	Lys	Asp	Gly	Glu	Glu	Thr	Thr	Val	Glu	Glu	Ile	Lys

 Ala Phe Cys
 Lys
 Gly Lys
 Ile Ser His Sen
 Phe Lys
 Ile Pro Lys
 Tyr 585

 Ile Val Phe Val Phe Sen
 Thr Asn Tyr
 Pro Leu Thr 595
 Ile Ser Gly Lys
 Ile 600

 Gln Lys
 Phe Lys
 Leu Arg Glu Gln Met Glu Arg His Leu Asn Leu 615

<210> 195

<211> 642

<212> DNA

<213> Homo sapiens

<400> 195
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gtggcaggca caatgatgtg tctgatgtac ggtgccaccc tcatcctggc 150
ctctcccatc ttcaatggca agaaggcact ggaggccatc agcagagaga 200
gaggcacctt cctgtatggt acccccacga tgttcgtgga cattctgaac 250
cagccagact tctccagtta tgacatctcg accatgtgg gaggtgtcat 300
tgctgggtcc cctgcacctc cagagttgat ccgagccatc atcaacaaga 350
taaatatgaa ggacctggtg gttgcttatg gaaccacaga gaacagtccc 400
gtgacattcg cgcacttccc tgaggacact gtggagcaga aggcagaaag 450
cgtgggcaga attatgcctc acacggaggc gcggatcatg aacatggagg 500
cagggacgct ggcaaagctg aacacgccg gggagctgtg catccgaggg 550
tactgcgtca tgctgggcta ctggggtgag cctcagaaga cagaggaagc 600
agtggatcag gacaagtggt attggacagg agatgtcgcc ac 642

<210> 196

<211> 1575

<212> DNA

<213> Homo sapiens

<400> 196

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<210> 197

<211> 346

<212> PRT

<213> Homo sapiens

<400> 197

Met Asp Pro Ala Arg Lys Ala Gly Ala Gln Ala Met Ile Trp Thr

1 5 10 15

Ala Gly Trp Leu Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala 20 25 30

Leu Glu Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser

45 40 35 Pro Asn Lys Met Lys Thr Val Lys Cys Ala Pro Gly Val Asp Val Cys Thr Glu Ala Val Gly Ala Val Glu Thr Ile His Gly Gln Phe Ser Leu Ala Val Arg Gly Cys Gly Ser Gly Leu Pro Gly Lys Asn Asp Arg Gly Leu Asp Leu His Gly Leu Leu Ala Phe Ile Gln Leu Gln Gln Cys Ala Gln Asp Arg Cys Asn Ala Lys Leu Asn Leu Thr 115 Ser Arg Ala Leu Asp Pro Ala Gly Asn Glu Ser Ala Tyr Pro Pro Asn Gly Val Glu Cys Tyr Ser Cys Val Gly Leu Ser Arg Glu Ala Cys Gln Gly Thr Ser Pro Pro Val Val Ser Cys Tyr Asn Ala Ser Asp His Val Tyr Lys Gly Cys Phe Asp Gly Asn Val Thr Leu Thr Ala Ala Asn Val Thr Val Ser Leu Pro Val Arg Gly Cys Val Gin 185 Asp Glu Phe Cys Thr Arg Asp Gly Val Thr Gly Pro Gly Phe Thr Leu Ser Gly Ser Cys Cys Gln Gly Ser Arg Cys Asn Ser Asp Leu 225 Arg Asn Lys Thr Tyr Phe Ser Pro Arg Ile Pro Pro Leu Val Arg 235 230 Leu Pro Pro Pro Glu Pro Thr Thr Val Ala Ser Thr Thr Ser Val Thr Thr Ser Thr Ser Ala Pro Val Arg Pro Thr Ser Thr Thr Lys Pro Met Pro Ala Pro Thr Ser Gln Thr Pro Arg Gln Gly Val Glu 275 His Glu Ala Ser Arg Asp Glu Glu Pro Arg Leu Thr Gly Gly Ala 295 290

Ala Gly His Gln Asp Arg Ser Asn Ser Gly Gln Tyr Pro Ala Lys

Gly Gly Pro Gln Gln Pro His Asn Lys Gly Cys Val Ala Pro Thr

Ala Gly Leu Ala Ala Leu Leu Leu Ala Val Ala Ala Gly Val Leu

320

Leu

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<210> 198
<211> 1657
<212> DNA
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<213> Homo sapiens

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<210> 199

<211> 120

<212> PRT

<213> Homo sapiens

<400> 199

Met Glu Leu Val Leu Val Phe Leu Cys Ser Leu Leu Ala Pro Met 1 5 10 15

Val Leu Ala Ser Ala Ala Glu Lys Glu Lys Glu Met Asp Pro Phe  $20 \\ 25 \\ 30$ 

His Tyr Asp Tyr Gln Thr Leu Arg Ile Gly Gly Leu Val Phe Ala 35 40 45

Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg
50 55 60

Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu 65 70 75

Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp 95 100 105

Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala 110 115 120

<210> 200

<211> 415

<212> DNA

<213> Homo sapiens

<400> 200

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## cattttccat ccaaa 415

- <210> 201
- <211> 99
- <212> PRT
- <213> Homo sapiens

## <400> 201

- Met Lys Ile Pro Val Leu Pro Ala Val Val Leu Leu Ser Leu Leu 1 10 15
- Val Leu His Ser Ala Gln Gly Ala Thr Leu Gly Gly Pro Glu Glu 20 25 30
- Glu Ser Thr Ile Glu Asn Tyr Ala Ser Arg Pro Glu Ala Phe Asn 35 40 45
- Thr Pro Phe Leu Asn Ile Asp Lys Leu Arg Ser Ala Phe Lys Ala 50 55 60
- Asp Glu Phe Leu Asn Trp His Ala Leu Phe Glu Ser Ile Lys Arg 65 70 75
- Lys Leu Pro Phe Leu Asn Trp Asp Ala Phe Pro Lys Leu Lys Gly 80 85 90
- Leu Arg Ser Ala Thr Pro Asp Ala Gln 95
- <210> 202
- <211> 678
- <212> DNA
- <213> Homo sapiens

## <400> 202

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<210> 203
<211> 52
<212> PRT
<213> Homo sapiens
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<400> 203

Met Gly Val Glu Ile Ala Phe Ala Ser Val Ile Leu Thr Cys Leu
1 5 10 15

Ser Leu Leu Ala Ala Gly Val Ser Gln Val Val Leu Leu Gln Pro  $20 \\ 25 \\ 30$ 

Val Pro Thr Gln Glu Thr Gly Pro Lys Ala Met Gly Asp Leu Ser 35 40 45

Cys Gly Phe Ala Gly His Ser 50

<210> 204 <211> 1917 <212> DNA <213> Homo sapiens

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<211> 392

<212> PRT

<213> Homo sapiens

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Phe Leu Leu Pro Ser Ala Gln Gly Arg Gln Lys Glu Ser Gly Ser 20 25 30

Lys Trp Lys Val Phe Ile Asp Gln Ile Asn Arg Ser Leu Glu Asn 35 40 45

Tyr Glu Pro Cys Ser Ser Gln Asn Cys Ser Cys Tyr His Gly Val
50 55 60

Ile Glu Glu Asp Leu Thr Pro Phe Arg Gly Gly Ile Ser Arg Lys
65 70 75

Met Met Ala Glu Val Val Arg Arg Lys Leu Gly Thr His Tyr Gln
80 85 90

Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro

				95					100					105
Ser	Arg	Cys	Ser	Gly 110	Val	Glu	His	Phe	Ile 115	Leu	Glu	Val	Ile	Gly 120
Arg	Leu	Pro	Asp	Met 125	Glu	Met	Val	Ile	Asn 130	Val	Arg	Asp	Tyr	Pro 135
Gln	Val	Pro	Lys	Trp 140	Met	Glu	Pro	Ala	Ile 145	Pro	Val	Phe	Ser	Phe 150
Ser	Lys	Thr	Ser	Glu 155	Tyr	His	Asp	Ile	Met 160	Tyr	Pro	Ala	Trp	Thr <sup>.</sup> 165
Phe	Trp	Glu	Gly	Gly 170	Pro	Ala	Val	Trp	Pro 175	Ile	Tyr	Pro	Thr	Gly 180
Leu	Gly	Arg	Trp	Asp 185	Leu	Phe	Arg	Glu	Asp 190	Leu	Val	Arg	Ser	Ala 195
Ala	Gln	Trp	Pro	Trp 200	Lys	Lys	Lys	Asn	Ser 205	Thr	Ala	Tyr	Phe	Arg 210
Gly	Ser	Arg	Thr	Ser 215	Pro	Glu	Arg	Asp	Pro 220	Leu	Ile	Leu	Leu	Ser 225
Arg	Lys	Asn	Pro	Lys 230	Leu	Val	Asp	Ala	Glu 235	Tyr	Thr	Lys	Asn	Gln 240
Ala	Trp	Lys	Ser	Met 245	Lys	Asp	Thr	Leu	Gly 250	Lys	Pro	Ala	Ala	Lys 255
Asp	Val	His	Leu	Val 260	Asp	His	Cys	Lys	Tyr 265	Lys	Tyr	Leu	Phe	Asn 270
Phe	Arg	Gly	Val	Ala 275	Ala	Ser	Phe	Arg	Phe 280	Lys	His	Leu	Phe	Leu 285
Cys	Gly	Ser	Leu	Val 290	Phe	His	Val	Gly	Asp 295	Glu	Trp	Leu	Glu	Phe 300
Phe	Tyr	Pro	Gln	Leu 305	Lys	Pro	Trp	Val	His 310	Tyr	Ile	Pro	Val	Lys 315
Thr	Asp	Leu	Ser	Asn 320	Val	Gln	Glu	Leu	Leu 325	Gln	Phe	Val	Lys	Ala 330
Asn	Asp	Asp	Val	Ala 335	Gln	Glu	Ile	Ala	Glu 340	Arg	Gly	Ser	Gln	Phe 345
Ile	Arg	Asn	His	Leu 350		Met	Asp	Asp	Ile 355	Thr	Cys	Tyr	Trp	Glu 360
Asn	Leu	l Leu	. Ser	Glu 365		Ser	Lys	Phe	Leu 370	. Ser	Tyr	: Asn	Val	Thr 375
Arg	Arg	J Lys	Gly	7 Tyr 380		Gln	Ile	Ile	Pro 385	Lys	Met	Leu	Lys	Thr 390
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<211> 1425 <212> DNA <213> Homo sapiens

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<212> DNA

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Ala Arg Gln Gly Trp Leu Ala Ala Leu Gln Asp Arg Ser Ile Leu
 Ala Pro Leu Ala Trp Asp Leu Gly Leu Leu Leu Phe Val Gly
 Gln His Ser Leu Met Ala Ala Glu Arg Val Lys Ala Trp Thr Ser
 Arg Tyr Phe Gly Val Leu Gln Arg Ser Leu Tyr Val Ala Cys Thr
 Ala Leu Ala Leu Gln Leu Val Met Arg Tyr Trp Glu Pro Ile Pro
 Lys Gly Pro Val Leu Trp Glu Ala Arg Ala Glu Pro Trp Ala Thr
                 125
 Trp Val Pro Leu Leu Cys Phe Val Leu His Val Ile Ser Trp Leu
 Leu Ile Phe Ser Ile Leu Leu Val Phe Asp Tyr Ala Glu Leu Met
 Gly Leu Lys Gln Val Tyr Tyr His Val Leu Gly Leu Gly Glu Pro
                 170
 Leu Ala Leu Lys Ser Pro Arg Ala Leu Arg Leu Phe Ser His Leu
 Arg His Pro Val Cys Val Glu Leu Leu Thr Val Leu Trp Val Val
                                      205
 Pro Thr Leu Gly Thr Asp Arg Leu Leu Leu Ala Phe Leu Leu Thr
                  215
 Leu Tyr Leu Gly Leu Ala His Gly Leu Asp Gln Gln Asp Leu Arg
 Tyr Leu Arg Ala Gln Leu Gln Arg Lys Leu His Leu Leu Ser Arg
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 Pro Gln Asp Gly Glu Ala Glu
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<210> 208
<211> 2095
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## <213> Homo sapiens

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<210> 209

<211> 331

<212> PRT

<400> 209

<213> Homo sapiens

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Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp

165

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Val Thr Glu Phe Cys Pro Asn Ala Lys Tyr Val Met Lys Thr Asp
Thr Asp Val Phe Ile Asn Thr Gly Asn Leu Val Lys Tyr Leu Leu
Asn Leu Asn His Ser Glu Lys Phe Phe Thr Gly Tyr Pro Leu Ile
                                                         210
                                     205
Asp Asn Tyr Ser Tyr Arg Gly Phe Tyr Gln Lys Thr His Ile Ser
                215
Tyr Gln Glu Tyr Pro Phe Lys Val Phe Pro Pro Tyr Cys Ser Gly
                230
Leu Gly Tyr Ile Met Ser Arg Asp Leu Val Pro Arg Ile Tyr Glu
Met Met Gly His Val Lys Pro Ile Lys Phe Glu Asp Val Tyr Val
                                                         270
                                     265
Gly Ile Cys Leu Asn Leu Leu Lys Val Asn Ile His Ile Pro Glu
                275
Asp Thr Asn Leu Phe Phe Leu Tyr Arg Ile His Leu Asp Val Cys
Gln Leu Arg Arg Val Ile Ala Ala His Gly Phe Ser Ser Lys Glu
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Ile Ile Thr Phe Trp Gln Val Met Leu Arg Asn Thr Thr Cys His
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Tyr

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caacgtcaat gatgacaaca acaatgctgg aagtgggcag cagtcagtga 150
gtgtcaacaa tgaacacaat gtggccaatg ttgacaataa caacggatgg 200
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<211> 185

<212> PRT

<213> Homo sapiens

<400> 211

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Ala Pro Ala Leu Ala Asn Tyr Asn Ile Asn Val Asn Asp Asp Asn 20 25 30

Asn Asn Ala Gly Ser Gly Gln Gln Ser Val Ser Val Asn Asn Glu 35 40 45

His Asn Val Ala Asn Val Asp Asn Asn Gly Trp Asp Ser Trp 50 55 60

Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu 65 70 75

Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val 80 85 90

Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys 95 100 105

Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Pro Lys Gly Leu Met 110 115 120

Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly
125 130 135

Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala 140 145 150

Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys 155 160 165

Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly 170 175 180

Asp Thr Val Glu Asn 185

<210> 212

<211> 1706

<212> DNA

<213> Homo sapiens

<400> 212

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atgaaataat ttaaaagggc ttcgctcata tataggaaaa tcgcatatgg 150 tcctagtatt aaattcttat tgcttactga tttttttgag ttaagagttg 200 ttatatgcta gaatatgagg atgtgaatat aaataagaga agaaaaaaga 250 ataaagtaga ttgagtctcc aattttatgt aagcttcaga agaactggtt 300 tgtttacatg caagcttata gttgaaatat ttttcaggaa ttacatgaat 350 gacagtette gaaccaatgt gtttgttega ttteaaccag agactatage 400 atgtgcttgc atctaccttg cagctagagc acttcagatt ccgttgccaa 450 ctcqtcccca ttggtttctt ctttttggta ctacagaaga ggaaatccag 500 gaaatctgca tagaaacact taggctttat accagaaaaa agccaaacta 550 tgaattactg gaaaaagaag tagaaaaaag aaaagtagcc ttacaagaag 600 ccaaattaaa agcaaaggga ttgaatccgg atggaactcc agccctttca 650 accetgggtg gattttetee ageeteeaag ceateateae caagagaagt 700 aaaagctgaa gagaaatcac caatctccat taatgtgaag acagtcaaaa 750 aagaacctga ggatagacaa caggcttcca aaagccctta caatggtgta 800 agaaaagaca gcaagagaag tagaaatagc agaagtgcaa gtcgatcgag 850 gtcaagaaca cgatcacgtt ctagatcaca tactccaaga agacactata 900 ataataggcg gagtcgatct ggaacataca gctcgagatc aagaagcagg 950 tcccgcagtc acagtgaaag ccctcgaaga catcataatc atggttctcc 1000 tcaccttaag gccaagcata ccagagatga tttaaaaagt tcaaacagac 1050 atggtcataa aaggaaaaaa tctcgttctc gatctcagag caagtctcgg 1100 gatcactcag atgcagccaa gaaacacagg catgaaaggg gacatcatag 1150 ggacaggcgt gaacgatctc gctcctttga gaggtcccat aaaagcaagc 1200 accatggtgg cagtcgctca ggacatggca ggcacaggcg ctgactttct 1250 cttcctttga gcctgcatca gttcttggtt ttgcctatct acagtgtgat 1300 cttgaaaccc tctaggtctc tagaacactg aggacagttt cttttgaaaa 1400 gaactatgtt aatttttttg cacattaaaa tgccctagca gtatctaatt 1450 aaaaaccatg gtcaggttca attgtacttt attatagttg tgtattgttt 1500 attgctataa gaactggagc gtgaattctg taaaaatgta tcttattttt 1550 atacagataa aattgcagac actgttctat ttaagtggtt atttgtttaa 1600 atgatggtga atactttctt aacactggtt tgtctgcatg tgtaaagatt 1650 

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<210> 213

<211> 299

<212> PRT

<213> Homo sapiens

<400> 213

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Gln Ile Pro Leu Pro Thr Arg Pro His Trp Phe Leu Leu Phe Gly 35 40 45

Thr Thr Glu Glu Glu Ile Gln Glu Ile Cys Ile Glu Thr Leu Arg
50 55 60

Leu Tyr Thr Arg Lys Lys Pro Asn Tyr Glu Leu Leu Glu Lys Glu 65 70 75

Val Glu Lys Arg Lys Val Ala Leu Gln Glu Ala Lys Leu Lys Ala 80 85 90

Lys Gly Leu Asn Pro Asp Gly Thr Pro Ala Leu Ser Thr Leu Gly 95 100 105

Gly Phe Ser Pro Ala Ser Lys Pro Ser Ser Pro Arg Glu Val Lys 110 115 120

Ala Glu Glu Lys Ser Pro Ile Ser Ile Asn Val Lys Thr Val Lys 125 130 135

Lys Glu Pro Glu Asp Arg Gln Gln Ala Ser Lys Ser Pro Tyr Asn 140 145 150

Gly Val Arg Lys Asp Ser Lys Arg Ser Arg Asn Ser Arg Ser Ala 155 160 165

Ser Arg Ser Arg Ser Arg Thr Arg Ser Arg Ser Arg Ser His Thr 170 175 180

Pro Arg Arg His Tyr Asn Asn Arg Arg Ser Arg Ser Gly Thr Tyr 185 190 195

Ser Ser Arg Ser Arg Ser Arg Ser Arg Ser His Ser Glu Ser Pro 200 205 210

Arg Arg His His Asn His Gly Ser Pro His Leu Lys Ala Lys His 215 220 225

Thr Arg Asp Asp Leu Lys Ser Ser Asn Arg His Gly His Lys Arg 230 235 240

Lys Lys Ser Arg Ser Arg Ser Gln Ser Lys Ser Arg Asp His Ser 245 250

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Arg Arg Glu Arg Ser Arg Ser Phe Glu Arg Ser His Lys Ser Lys

His His Gly Gly Ser Arg Ser Gly His Gly Arg His Arg Arg

275

<213> Homo sapiens

<220>

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<223> unknown base

<400> 214

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<210> 215

<211> 1807

<212> DNA

<213> Homo sapiens

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<210> 216

<211> 479 <212> PRT <213> Homo sapiens

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「前川田戸で

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	290	295		300						
Thr Arg Phe Ser	Leu Leu Ser 305	Asp Ser Ala 310	Phe Asp Ser	Gly Arg 315						
Leu Trp Leu Leu	Val Val Leu 320	Cys Leu Leu 325	Arg Leu Ala	Val Thr 330						
Arg Pro His Leu	Gln Ala Tyr 335	Leu Cys Leu 340	Ala Lys Ala	Arg Val 345						
Glu Gln Leu Arg	Arg Glu Ala 350	Gly Arg Ile 355	Glu Ala Arg	Glu Ile 360						
Gln Gln Arg Val	Val Arg Val 365	Tyr Cys Tyr 370	Val Thr Val	Val Ser 375						
Leu Gln Tyr Leu	Thr Pro Leu 380	Ile Leu Thr 385	Leu Asn Cys	Thr Leu 390						
Leu Leu Lys Thr	Leu Gly Gly 395	Tyr Ser Trp 400	Gly Leu Gly	Pro Ala 405						
Pro Leu Leu Ser	Pro Asp Pro 410	Ser Ser Ala 415	Ser Ala Ala	Pro Ile 420						
Gly Ser Gly Glu	Asp Glu Val 425	Gln Gln Thr 430	Ala Ala Arg	Ile Ala 435						
Gly Ala Leu Gly	Gly Leu Leu 440	Thr Pro Leu 445	Phe Leu Arg	Gly Val 450						
Leu Ala Tyr Leu	Ile Trp Trp 455	Thr Ala Ala 460	Cys Gln Leu	Leu Ala 465						
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		attaa astaas	agga cocotnt	taa 150						

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<sup>&</sup>lt;210> 219

<sup>&</sup>lt;211> 632

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 219

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Leu	Cys	Lys	Gly	Ala 35	Ser	His	Tyr	Gly	Leu 40	Thr	Lys	Asp	Arg	Lys 45
Arg	Arg	Ser	Gln	Asp 50	Gly	Cys	Pro	Asp	Gly 55	Cys	Ala	Ser	Leu	Thr 60
Ala	Thr	Ala	Pro	Ser 65	Pro	Glu	Val	Ser	Ala 70	Ala	Ala	Thr	Ile	Ser 75
Leu	Met	Thr	Asp	Glu 80	Pro	Gly	Leu	Asp	Asn 85	Pro	Ala	Tyr	Val	Ser 90
Ser	Ala	Glu	Asp	Gly 95	Gln	Pro	Ala	Ile	Ser 100	Pro	Val	Asp	Ser	Gly 105
Arg	Ser	Asn	Arg	Thr 110	Arg	Ala	Arg	Pro	Phe 115	Glu	Arg	Ser	Thr	Ile 120
Arg	Ser	Arg	Ser	Phe 125	Lys	Lys	Ile	Asn	Arg 130	Ala	Leu	Ser	Val	Leu 135
Arg	Arg	Thr	Lys	Ser 140	Gly	Ser	Ala	Val	Ala 145	Asn	His	Ala	Asp	Gln 150
Gly	Arg	Glu	Asn	Ser 155	Glu	Asn	Thr	Thr	Ala 160	Pro	Glu	Val	Phe	Pro 165
Arg	Leu	Tyr	His	Leu 170	Ile	Pro	Asp	Gly	Glu 175	Ile	Thr	Ser	Ile	Lys 180
Ile	Asn	Arg	Val	Asp 185	Pro	Ser	Glu	Ser	Leu 190	Ser	Ile	Arg	Leu	Val 195
Gly	Gly	Ser	Glu	Thr 200	Pro	Leu	Val	His	Ile 205	Ile	Ile	Gln	His	Ile 210
Tyr	Arg	Asp	Gly	Val 215	Ile	Ala	Arg	Asp	Gly 220	Arg	Leu	Leu	Pro	Gly 225
Asp	Ile	Ile	Leu	Lys 230	Val	Asn	Gly	Met	Asp 235	Ile	Ser	Asn	Val	Pro 240
His	Asn	Tyr	Ala	Val 245	Arg	Leu	Leu	Arg	Gln 250	Pro	Суз	Gln	Val	Leu 255
Trp	Leu	Thr	Val	Met 260	Arg	Glu	Gln	Lys	Phe 265	Arg	Ser	Arg	Asn	Asr 270
Gly	Gln	Ala	Pro	Asp 275	Ala	Tyr	Arg	Pro	Arg 280	Asp	Asp	Ser	Phe	His 285
Val	Ile	Leu	Asn	Lys 290	Ser	Ser	Pro	Glu	Glu 295	Gln	Leu	Gly	Ile	Lys 300
Leu	Val	Arg	Lys	Val 305	Asp	Glu	Pro	Gly	Val 310		Ile	Phe	Asn	Val 315
Leu	Asp	Gly	Gly	Val	Ala	Tyr	Arg	His	Gly	Gln	Leu	Glu	Glu	Asr

330 325 320 Asp Arg Val Leu Ala Ile Asn Gly His Asp Leu Arg Tyr Gly Ser Pro Glu Ser Ala Ala His Leu Ile Gln Ala Ser Glu Arg Arg Val His Leu Val Val Ser Arg Gln Val Arg Gln Arg Ser Pro Asp Ile 375 Phe Gln Glu Ala Gly Trp Asn Ser Asn Gly Ser Trp Ser Pro Gly 380 Pro Gly Glu Arg Ser Asn Thr Pro Lys Pro Leu His Pro Thr Ile 400 395 Thr Cys His Glu Lys Val Val Asn Ile Gln Lys Asp Pro Gly Glu Ser Leu Gly Met Thr Val Ala Gly Gly Ala Ser His Arg Glu Trp 435 425 Asp Leu Pro Ile Tyr Val Ile Ser Val Glu Pro Gly Gly Val Ile Ser Arg Asp Gly Arg Ile Lys Thr Gly Asp Ile Leu Leu Asn Val Asp Gly Val Glu Leu Thr Glu Val Ser Arg Ser Glu Ala Val Ala 475 Leu Leu Lys Arg Thr Ser Ser Ser Ile Val Leu Lys Ala Leu Glu 485 Val Lys Glu Tyr Glu Pro Gln Glu Asp Cys Ser Ser Pro Ala Ala 510 Leu Asp Ser Asn His Asn Met Ala Pro Pro Ser Asp Trp Ser Pro 520 Ser Trp Val Met Trp Leu Glu Leu Pro Arg Cys Leu Tyr Asn Cys 530 Lys Asp Ile Val Leu Arg Arg Asn Thr Ala Gly Ser Leu Gly Phe Cys Ile Val Gly Gly Tyr Glu Glu Tyr Asn Gly Asn Lys Pro Phe Phe Ile Lys Ser Ile Val Glu Gly Thr Pro Ala Tyr Asn Asp Gly 580 Arg Ile Arg Cys Gly Asp Ile Leu Leu Ala Val Asn Gly Arg Ser Thr Ser Gly Met Ile His Ala Cys Leu Ala Arg Leu Leu Lys Glu 610 Leu Lys Gly Arg Ile Thr Leu Thr Ile Val Ser Trp Pro Gly Thr Phe Leu

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<211> 773
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<213> Homo sapiens

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Asp Ile His Val

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<213> Homo sapiens

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<211> 265

<212> PRT

<213> Homo sapiens

<400> 223

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Ile Ala Tyr Lys Val Leu Glu Val Phe Pro Lys Gly Arg Trp Val 35 40 45

Leu Ile Thr Cys Cys Ala Pro Gln Pro Pro Pro Pro Ile Thr Tyr 50 55 60

Ser Leu Cys Gly Thr Lys Asn Ile Lys Val Ala Lys Lys Val Val
65 70 75

Lys Thr His Glu Pro Ala Ser Phe Asn Leu Asn Val Thr Leu Lys 80 85 90

Ser Ser Pro Asp Leu Leu Thr Tyr Phe Cys Arg Ala Ser Ser Thr 95 100 105

Ser Gly Ala His Val Asp Ser Ala Arg Leu Gln Met His Trp Glu 110 115 120

Leu Trp Ser Lys Pro Val Ser Glu Leu Arg Ala Asn Phe Thr Leu 125 130 135

Gln Asp Arg Gly Ala Gly Pro Arg Val Glu Met Ile Cys Gln Ala 140 145 150

Ser Ser Gly Ser Pro Pro Ile Thr Asn Ser Leu Ile Gly Lys Asp 155 160 165

Gly Gln Val His Leu Gln Gln Arg Pro Cys His Arg Gln Pro Ala 170 175 180

Asn Phe Ser Phe Leu Pro Ser Gln Thr Ser Asp Trp Phe Trp Cys 185 190 195

Gln Ala Ala Asn Asn Ala Asn Val Gln His Ser Ala Leu Thr Val 200 205 210

Val Pro Pro Gly Gly Asp Gln Lys Met Glu Asp Trp Gln Gly Pro 215 220 225

Leu Glu Ser Pro Ile Leu Ala Leu Pro Leu Tyr Arg Ser Thr Arg 230 235 240

Glu Val Arg Gly Arg Lys Ala Ala Ala Met 260 265

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<sup>&</sup>lt;211> 246

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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Leu Leu Leu Ser Gly Trp Ser Arg Ala Gly Arg Ala Asp Pro
His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro Lys Phe Arg Pro
 Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp Glu Lys Thr
 Phe Leu His Tyr Asp Cys Gly Asn Lys Thr Val Thr Pro Val Ser
 Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala Gln
                                      85
Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
                                     100
Arg Asp Ile Gln Leu Glu Asn Tyr Thr Pro Lys Glu Pro Leu Thr
                                     115
                                                         120
Leu Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Ser
 Ser Gly Ser Trp Gln Phe Ser Phe Asp Gly Gln Ile Phe Leu Leu
 Phe Asp Ser Glu Lys Arg Met Trp Thr Thr Val His Pro Gly Ala
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                                     160
Arg Lys Met Lys Glu Lys Trp Glu Asn Asp Lys Val Val Ala Met
                                     175
 Ser Phe His Tyr Phe Ser Met Gly Asp Cys Ile Gly Trp Leu Glu
                 185
Asp Phe Leu Met Gly Met Asp Ser Thr Leu Glu Pro Ser Ala Gly
                 200
                                     205
Ala Pro Leu Ala Met Ser Ser Gly Thr Thr Gln Leu Arg Ala Thr
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Ala Thr Thr Leu Ile Leu Cys Cys Leu Leu Ile Ile Leu Pro Cys
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 Phe Ile Leu Pro Gly Ile
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<210> 226

<211> 735

<212> DNA

<213> Homo sapiens

<400> 226

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ggttttaatt ttggtggtag ccctcaccca attctggtgt ggctttcttt 200 gcagaggatt ccaccttcaa aatcatgaac tctggctgtt gatcaaaaga 250 gaatttggat tctactctaa aagtcaatat aggacttggc aaaagaagct 300 agcagaagac tcaacctggc ctcccataaa caggacagat tattcaggtg 350 atggcaaaaa tggattctac atcaacggag gctatgaaag ccatgaacag 400 attccaaaaa gaaaactcaa attgggaggc caacccacag aacagcattt 450 ctgggccagg ctgtaatcag aattgtcgtc gtacatgctc aacagcattg 500 ctttttccc caaaattaac acattgtgga gaagtgatga tactctccc 550 ttaccttcc tctctccatt caagcattca aagtatattt tcaatgaatt 600 aaaccttgca gcaagggacc ttagataggc ttattctgac tgtatgctt 650 accaatgaga gaaaaaaaa caattacctt atcatcctt tcaataaact 700 gtattcattt tgaaaaaaaa aaaaaaaaa aaaaaa 735

<210> 227

<211> 115

<212> PRT

<213> Homo sapiens

<400> 227

Met Glu Leu Ile Pro Thr Ile Thr Ser Trp Arg Val Leu Ile Leu 1 5 10 15

Val Val Ala Leu Thr Gln Phe Trp Cys Gly Phe Leu Cys Arg Gly 20 25 30

Phe His Leu Gln Asn His Glu Leu Trp Leu Leu Ile Lys Arg Glu 35 40 45

Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys 50 55 60

Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr 65 70 75

Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu 80 85 90

Ser His Glu Gln Ile Pro Lys Arg Lys Leu Lys Leu Gly Gln 95 100 105

Pro Thr Glu Gln His Phe Trp Ala Arg Leu 110 115

<210> 228

<211> 2185

<212> DNA

<213> Homo sapiens

<400> 228

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<210> 229

<211> 653

<212> PRT

<213> Homo sapiens

<400> 229

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Gly Leu Ala Ser Leu Asn Thr Leu Glu Leu Phe Asp Asn Trp Leu 125 130

Thr Val Ile Pro Ser Gly Ala Phe Glu Tyr Leu Ser Lys Leu Arg 150

Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser Tyr 160

Ala Phe Asn Arg Val Pro Ser Leu Met Arg Leu Asp Leu Gly Glu

Leu Lys Lys Leu Glu Tyr Ile Ser Glu Gly Ala Phe Glu Gly Leu

				185					190					195
Phe	Asn	Leu	Lys	Tyr 200	Leu	Asn	Leu	Gly	Met 205	Cys	Asn	Ile	Lys	Asp 210
Met	Pro	Asn	Leu	Thr 215	Pro	Leu	Val	Gly	Leu 220	Glu	Glu	Leu	Glu	Met 225
Ser	Gly	Asn	His	Phe 230	Pro	Glu	Ile	Arg	Pro 235	Gly	Ser	Phe	His	Gly 240
Leu	Ser	Ser	Leu	Lys 245	Lys	Leu	Trp	Val	Met 250	Asn	Ser	Gln	Val	Ser 255
Leu	Ile	Glu	Arg	Asn 260	Ala	Phe	Asp	Gly	Leu 265	Ala	Ser	Leu	Val	Glu 270
Leu	Asn	Leu	Ala	His 275	Asn	Asn	Leu	Ser	Ser 280	Leu	Pro	His	Asp	Leu 285
Phe	Thr	Pro	Leu	Arg 290	Tyr	Leu	Val	Glu	Leu 295	His	Leu	His	His	Asn 300
Pro	Trp	Asn	Cys	Asp 305	Cys	Asp	Ile	Leu	Trp 310	Leu	Ala	Trp	Trp	Leu 315
Arg	Glu	Tyr	Ile	Pro 320	Thr	Asn	Ser	Thr	Cys 325	Cys	Gly	Arg	Cys	His 330
Ala	Pro	Met	His	Met 335	Arg	Gly	Arg	Tyr	Leu 340	Val	Glu	Val	Asp	Gln 345
Ala	Ser	Phe	Gln	Cys 350	Ser	Ala	Pro	Phe	Ile 355	Met	Asp	Ala	Pro	Arg 360
Asp	Leu	Asn	Ile	Ser 365	Glu	Gly	Arg	Met	Ala 370	Glu	Leu	Lys	Cys	Arg 375
Thr	Pro	Pro	Met	Ser 380	Ser	Val	Lys	Trp	Leu 385	Leu	Pro	Asn	Gly	Thr 390
Val	Leu	Ser	His	Ala 395	Ser	Arg	His	Pro	Arg 400	Ile	Ser	Val	Leu	Asn 405
Asp	Gly	Thr	Leu	Asn 410	Phe	Ser	His	Val	Leu 415	Leu	Ser	Asp	Thr	Gly 420
Val	Tyr	Thr	Суз	Met 425	Val	Thr	Asn	Val	Ala 430	Gly	Asn	Ser	Asn	Ala 435
Ser	Ala	Tyr	Leu	Asn 440	Val	Ser	Thr	Ala	Glu 445	Leu	Asn	Thr	Ser	Asn 450
Tyr	Ser	Phe	Phe	Thr 455	Thr	Val	Thr	Val	Glu 460	Thr	Thr	Glu	Ile	Ser 465
Pro	Glu	Asp	Thr	Thr 470	Arg	Lys	Tyr	Lys	Pro 475	Val	Pro	Thr	Thr	Ser 480
Thr	Gly	Tyr	Gln	Pro 485	Ala	Tyr	Thr	Thr	Ser 490	Thr	Thr	Val	Leu	Ile 495
Gln	Thr	Thr	Arg	Val	Pro	Lys	Gln	Val	Ala	Val	Pro	Ala	Thr	Asp

510 500 505 Thr Thr Asp Lys Met Gln Thr Ser Leu Asp Glu Val Met Lys Thr 520 Thr Lys Ile Ile Gly Cys Phe Val Ala Val Thr Leu Leu Ala Ala Ala Met Leu Ile Val Phe Tyr Lys Leu Arg Lys Arg His Gln 555 545 550 Gln Arg Ser Thr Val Thr Ala Ala Arg Thr Val Glu Ile Ile Gln 560 Val Asp Glu Asp Ile Pro Ala Ala Thr Ser Ala Ala Ala Thr Ala 575 580 Ala Pro Ser Gly Val Ser Gly Glu Gly Ala Val Val Leu Pro Thr 600 Ile His Asp His Ile Asn Tyr Asn Thr Tyr Lys Pro Ala His Gly 610 605 Ala His Trp Thr Glu Asn Ser Leu Gly Asn Ser Leu His Pro Thr Val Thr Thr Ile Ser Glu Pro Tyr Ile Ile Gln Thr His Thr Lys 645 Asp Lys Val Gln Glu Thr Gln Ile 650

<210> 230 <211> 2846 <212> DNA

<213> Homo sapiens

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tacacagtca ttaatgaagc ctgccctgga gcagagtgga atatcatgtg 150
tcgggagtgc tgtgaatatg atcagattga gtgcgtctgc cccggaaaga 200
gggaagtcgt gggttatacc atcccttgct gcaggaatga ggagaatgag 250
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<210> 231

<211> 720

<212> PRT

<213> Homo sapiens

<400> 231

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Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn 20 25 30

Glu Ala Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys 35 40 45

Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu 50 55 60

Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu 65 70 75

Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn 80 85 90

Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp 95 100

Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp 110 115 120

Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro 125 130 135

Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys 140 145

Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg 155 160 165

Phe Val Met Leu Ser Leu Glu Phe Asp Tyr Met Cys Gln Tyr Asp 170 Tyr Val Glu Val Arg Asp Gly Asp Asn Arg Asp Gly Gln Ile Ile Lys Arg Val Cys Gly Asn Glu Arg Pro Ala Pro Ile Gln Ser Ile Gly Ser Ser Leu His Val Leu Phe His Ser Asp Gly Ser Lys Asn 215 Phe Asp Gly Phe His Ala Ile Tyr Glu Glu Ile Thr Ala Cys Ser 230 Ser Ser Pro Cys Phe His Asp Gly Thr Cys Val Leu Asp Lys Ala Gly Ser Tyr Lys Cys Ala Cys Leu Ala Gly Tyr Thr Gly Gln Arg Cys Glu Asn Leu Leu Glu Glu Arg Asn Cys Ser Asp Pro Gly Gly 285 Pro Val Asn Gly Tyr Gln Lys Ile Thr Gly Gly Pro Gly Leu Ile Asn Gly Arg His Ala Lys Ile Gly Thr Val Val Ser Phe Phe Cys Asn Asn Ser Tyr Val Leu Ser Gly Asn Glu Lys Arg Thr Cys Gln 320 Gln Asn Gly Glu Trp Ser Gly Lys Gln Pro Ile Cys Ile Lys Ala Cys Arg Glu Pro Lys Ile Ser Asp Leu Val Arg Arg Arg Val Leu Pro Met Gln Val Gln Ser Arg Glu Thr Pro Leu His Gln Leu Tyr 370 365 Ser Ala Ala Phe Ser Lys Gln Lys Leu Gln Ser Ala Pro Thr Lys Lys Pro Ala Leu Pro Phe Gly Asp Leu Pro Met Gly Tyr Gln His Leu His Thr Gln Leu Gln Tyr Glu Cys Ile Ser Pro Phe Tyr Arg 415 410 Arg Leu Gly Ser Ser Arg Arg Thr Cys Leu Arg Thr Gly Lys Trp Ser Gly Arg Ala Pro Ser Cys Ile Pro Ile Cys Gly Lys Ile Glu 450 Asn Ile Thr Ala Pro Lys Thr Gln Gly Leu Arg Trp Pro Trp Gln 460 455 Ala Ala Ile Tyr Arg Arg Thr Ser Gly Val His Asp Gly Ser Leu 475

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His Lys Gly Ala Trp Phe Leu Val Cys Ser Gly Ala Leu Val Asn
Glu Arg Thr Val Val Val Ala Ala His Cys Val Thr Asp Leu Gly
Lys Val Thr Met Ile Lys Thr Ala Asp Leu Lys Val Val Leu Gly
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                                     520
Lys Phe Tyr Arg Asp Asp Asp Arg Asp Glu Lys Thr Ile Gln Ser
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Leu Gln Ile Ser Ala Ile Ile Leu His Pro Asn Tyr Asp Pro Ile
                                     550
Leu Leu Asp Ala Asp Ile Ala Ile Leu Lys Leu Leu Asp Lys Ala
                 560
Arg Ile Ser Thr Arg Val Gln Pro Ile Cys Leu Ala Ala Ser Arg
                                                          585
Asp Leu Ser Thr Ser Phe Gln Glu Ser His Ile Thr Val Ala Gly
Trp Asn Val Leu Ala Asp Val Arg Ser Pro Gly Phe Lys Asn Asp
Thr Leu Arg Ser Gly Val Val Ser Val Val Asp Ser Leu Leu Cys
                                                          630
                                     625
Glu Glu Gln His Glu Asp His Gly Ile Pro Val Ser Val Thr Asp
Asn Met Phe Cys Ala Ser Trp Glu Pro Thr Ala Pro Ser Asp Ile
                                     655
                 650
Cys Thr Ala Glu Thr Gly Gly Ile Ala Ala Val Ser Phe Pro Gly
                                                          675
Arg Ala Ser Pro Glu Pro Arg Trp His Leu Met Gly Leu Val Ser
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<210> 232
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<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

<sup>&</sup>lt;400> 232

aggttcgtga tggagacaac cgcg 24

<sup>&</sup>lt;210> 233

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

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<223> Synthetic oligonucleotide probe
<400> 233
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 caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200
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tggttgaagg agatttattt aaatttgaag taatatatta tgggataaaa 1500
ggccacagga aataagactg ctgaatgtct gagagaacca gagttgttct 1550
cgtccaaggt agaaaggtac gaagatacaa tactgttatt catttatcct 1600
gtacaatcat ctgtgaagtg gtggtgtcag gtgagaaggc gtccacaaaa 1650
qaqqqaqaa aaggcgacga atcaggacac agtgaacttg ggaatgaaga 1700
gttgcaggtg ctgatagcct tcaggggagg acctgcccag gtatgccttc 1800
cagtgatgcc caccagagaa tacattctct attagttttt aaagagtttt 1850
tgtaaaatga ttttgtacaa gtaggatatg aattagcagt ttacaagttt 1900
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gtgaaaaagc aaaa 1964
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<210> 236
<211> 344
<212> PRT
<213> Homo sapiens
<220>
<221> Signal peptide
<222> 1-27
<223> Signal peptide
<220>
<221> N-glycosylation sites
<222> 4-7, 220-223, 335-338
<223> N-glycosylation sites
<220>
<221> Xylose isomerase proteins
<222> 191-201
<223> Xylose isomerase proteins
<400> 236
Met Gly Phe Asn Leu Thr Phe His Leu Ser Tyr Lys Phe Arg Leu
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Leu Leu Leu Thr Leu Cys Leu Thr Val Val Gly Trp Ala Thr Ser Asn Tyr Phe Val Gly Ala Ile Gln Glu Ile Pro Lys Ala Lys Glu Phe Met Ala Asn Phe His Lys Thr Leu Ile Leu Gly Lys Gly Lys Thr Leu Thr Asn Glu Ala Ser Thr Lys Lys Val Glu Leu Asp Asn Cys Pro Ser Val Ser Pro Tyr Leu Arg Gly Gln Ser Lys Leu Ile Phe Lys Pro Asp Leu Thr Leu Glu Glu Val Gln Ala Glu Asn Pro Lys Val Ser Arg Gly Arg Tyr Arg Pro Gln Glu Cys Lys Ala Leu Gln Arg Val Ala Ile Leu Val Pro His Arg Asn Arg Glu Lys 130 125 His Leu Met Tyr Leu Leu Glu His Leu His Pro Phe Leu Gln Arg Gln Gln Leu Asp Tyr Gly Ile Tyr Val Ile His Gln Ala Glu Gly Lys Lys Phe Asn Arg Ala Lys Leu Leu Asn Val Gly Tyr Leu Glu Ala Leu Lys Glu Glu Asn Trp Asp Cys Phe Ile Phe His Asp Val 195 190 Asp Leu Val Pro Glu Asn Asp Phe Asn Leu Tyr Lys Cys Glu Glu 205 His Pro Lys His Leu Val Val Gly Arg Asn Ser Thr Gly Tyr Arg 215 Leu Arg Tyr Ser Gly Tyr Phe Gly Gly Val Thr Ala Leu Ser Arg 235 Glu Gln Phe Phe Lys Val Asn Gly Phe Ser Asn Asn Tyr Trp Gly 250 Trp Gly Gly Glu Asp Asp Asp Leu Arg Leu Arg Val Glu Leu Gln Arg Met Lys Ile Ser Arg Pro Leu Pro Glu Val Gly Lys Tyr Thr 275 Met Val Phe His Thr Arg Asp Lys Gly Asn Glu Val Asn Ala Glu 295 Arg Met Lys Leu Leu His Gln Val Ser Arg Val Trp Arg Thr Asp Gly Leu Ser Ser Cys Ser Tyr Lys Leu Val Ser Val Glu His Asn 325

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<210> 237
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 237
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<210> 238
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 238
gagetteate egttetgegt teace 25
<210> 239
<211> 46
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 239
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<210> 240
<211> 2567
<212> DNA
<213> Homo sapiens
<400> 240
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 geogeagtte tegageteca getgeattee eteegegtee geoecaeget 100
 tetecegete egggeeeege aatggeeeag geagtgtggt egegeetegg 150
 ccgcatcctc tggcttgcct gcctcctgcc ctgggccccg gcaggggtgg 200
 ccgcaggcct gtatgaactc aatctcacca ccgatagccc tgccaccacg 250
 ggagcggtgg tgaccatctc ggccagcctg gtggccaagg acaacggcag 300
 cctggccctg cccgctgacg cccacctcta ccgcttccac tggatccaca 350
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 cgtgtggtcg gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450
 tgccgctgac tgctggatgt gccagcctgt ggccaggggc tttgtggtcc 500
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Pro Leu Tyr Ile Asn Ile Thr Val Asp Phe Trp Phe Gly Ala

tececateae agagtteete gtgggggaee ttgttgteae eeagaacaet 550

tocotaccot ggoccagoto ctatotoact aagacogtoo tgaaagtoto 600 cttcctcctc cacgacccga gcaacttcct caagaccgcc ttgtttctct 650 acagctggga cttcggggac gggacccaga tggtgactga agactccgtg 700 gtctattata actattccat catcgggacc ttcaccgtga agctcaaagt 750 ggtggcggag tgggaagagg tggagccgga tgccacgagg gctgtgaagc 800 agaagaccgg ggacttctcc gcctcgctga agctgcagga aacccttcga 850 ggcatccaag tgttggggcc caccctaatt cagaccttcc aaaagatgac 900 cgtgaccttg aacttcctgg ggagccctcc tctgactgtg tgctggcgtc 950 tcaagcctga gtgcctcccg ctggaggaag gggagtgcca ccctgtgtcc 1000 gtggccagca cagcgtacaa cctgacccac accttcaggg accctgggga 1050 ctactgcttc agcatccggg ccgagaatat catcagcaag acacatcagt 1100 accacaagat ccaggtgtgg ccctccagaa tccagccggc tgtctttgct 1150 ttcccatgtg ctacacttat cactgtgatg ttggccttca tcatgtacat 1200 gaccctgcgg aatgccactc agcaaaagga catggtggag aacccggagc 1250 caccetetgg ggtcaggtgc tgctgccaga tgtgctgtgg gcctttcttg 1300 ctggagactc catctgagta cctggaaatt gttcgtgaga accacgggct 1350 gctcccgccc ctctataagt ctgtcaaaac ttacaccgtg tgagcactcc 1400 ccctccccac cccatctcag tgttaactga ctgctgactt ggagtttcca 1450 gcagggtggt gtgcaccact gaccaggagg ggttcatttg cgtggggctg 1500 ttggcctgga tcatccatcc atctgtacag ttcagccact gccacaagcc 1550 cctcctctc tgtcacccct gaccccagcc attcacccat ctgtacagtc 1600 cagccactga cataagcccc actcggttac caccccttg accccctacc 1650 tttgaagagg cttcgtgcag gactttgatg cttggggtgt tccgtgttga 1700 ctcctaggtg ggcctggctg cccactgccc attcctctca tattggcaca 1750 tetgetgtee attgggggtt etcagtttee teececagae agecetaeet 1800 gtgccagaga gctagaaaga aggtcataaa gggttaaaaa tccataacta 1850 aaggttgtac acatagatgg gcacactcac agagagaagt gtgcatgtac 1900 acacaccaca cacacacaca cacacacaca cacagaaata taaacacatg 1950 cgtcacatgg gcatttcaga tgatcagctc tgtatctggt taagtcggtt 2000 gctgggatgc accctgcact agagctgaaa ggaaatttga cctccaagca 2050 gccctgacag gttctgggcc cgggccctcc ctttgtgctt tgtctctgca 2100 gttcttgcgc cctttataag gccatcctag tccctgctgg ctggcagggg 2150 cctggatggg gggcaggact aatactgagt gattgcagag tgctttataa 2200 atatcacctt attttatcga aacccatctg tgaaactttc actgaggaaa 2250 aggeettgea geggtagaag aggttgagte aaggeeggge geggtggete 2300 acqcctqtaa tcccaqcact ttqqqaqqcc qagqcqgqtg gatcacgaga 2350 tcaggagatc gagaccaccc tggctaacac ggtgaaaccc cgtctctact 2400 aaaaaaatac aaaaagttag ccgggcgtgg tggtgggtgc ctgtagtccc 2450 aqctactcqq qaqqctqaqq caqqaqaatq qtqcqaaccc qggagqcgga 2500 gcttgcagtg agcccagatg gcgccactgc actccagcct gagtgacaga 2550 gcgagactct gtctcca 2567

<210> 241 <211> 423

<212> PRT

<213> Homo sapiens

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Pro Ser Asn Phe Leu Lys Thr Ala Leu Phe Leu Tyr Ser Trp Asp

Phe Gly Asp Gly Thr Gln Met Val Thr Glu Asp Ser Val Val Tyr

185

190

195

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Tyr Asn Tyr Ser Ile Ile Gly Thr Phe Thr Val Lys Leu Lys Val
Val Ala Glu Trp Glu Glu Val Glu Pro Asp Ala Thr Arg Ala Val
Lys Gln Lys Thr Gly Asp Phe Ser Ala Ser Leu Lys Leu Gln Glu
                230
                                    235
Thr Leu Arg Gly Ile Gln Val Leu Gly Pro Thr Leu Ile Gln Thr
Phe Gln Lys Met Thr Val Thr Leu Asn Phe Leu Gly Ser Pro Pro
                                    265
Leu Thr Val Cys Trp Arg Leu Lys Pro Glu Cys Leu Pro Leu Glu
Glu Gly Glu Cys His Pro Val Ser Val Ala Ser Thr Ala Tyr Asn
Leu Thr His Thr Phe Arg Asp Pro Gly Asp Tyr Cys Phe Ser Ile
Arg Ala Glu Asn Ile Ile Ser Lys Thr His Gln Tyr His Lys Ile
Gln Val Trp Pro Ser Arg Ile Gln Pro Ala Val Phe Ala Phe Pro
                335
Cys Ala Thr Leu Ile Thr Val Met Leu Ala Phe Ile Met Tyr Met
                350
Thr Leu Arg Asn Ala Thr Gln Gln Lys Asp Met Val Glu Asn Pro
                                                         375
                365
Glu Pro Pro Ser Gly Val Arg Cys Cys Cys Gln Met Cys Cys Gly
                                     385
                380
Pro Phe Leu Leu Glu Thr Pro Ser Glu Tyr Leu Glu Ile Val Arg
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Glu Asn His Gly Leu Leu Pro Pro Leu Tyr Lys Ser Val Lys Thr
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Tyr Thr Val

<210> 242

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 242

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<210> 243

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe
<400> 243
gaaaggccca cagcacatct ggcag 25
<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence
<220>
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<400> 244
ccacgacccg agcaacttcc tcaagaccga cttgtttctc tacagc 46
<210> 245
<211> 485
<212> DNA
<213> Homo sapiens
<400> 245
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 ctgaccagtg gctctgtttt cccacaacag acgggacaac ttgcagagct 150
 gcaaccccag gacagagctg gagccagggc cagctggatg cccatgttcc 200
 agaggcgaag gaggcgagac acccacttcc ccatctgcat tttctgctgc 250
 ggctgctgtc atcgatcaaa gtgtgggatg tgctgcaaga cgtagaacct 300
 acctgccctg cccccgtccc ctcccttcct tatttattcc tgctgcccca 350
 gaacataggt cttggaataa aatggctggt tcttttgttt tccaaaaaaa 400
 aaaaaaaaaa aaaaaaaaaa aaaaaa 485
<210> 246
<211> 84
<212> PRT
<213> Homo sapiens
<400> 246
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 Leu Leu Leu Ala Ser Leu Thr Ser Gly Ser Val Phe Pro Gln Gln
 Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
 Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Asp
 Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
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## Ser Lys Cys Gly Met Cys Cys Lys Thr

<210> 247

<211> 2359

<212> DNA

<213> Homo sapiens

<400> 247

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<210> 248

<211> 456

<212> PRT

<213> Homo sapiens

<400> 248

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Gly Ile Ser Leu Thr Val Leu Phe Thr Leu Leu Val Phe Ile 20 25 30

Ile Val Pro Ala Ile Phe Gly Val Ser Phe Gly Ile Arg Lys Leu 35 40 45

Tyr Met Lys Ser Leu Leu Lys Ile Phe Ala Trp Ala Thr Leu Arg
50 55 60

Met Glu Arg Gly Ala Lys Glu Lys Asn His Gln Leu Tyr Lys Pro 65 70 75 Tyr Thr Asn Gly Ile Ile Ala Lys Asp Pro Thr Ser Leu Glu Glu Glu Ile Lys Glu Ile Arg Arg Ser Gly Ser Ser Lys Ala Leu Asp Asn Thr Pro Glu Phe Glu Leu Ser Asp Ile Phe Tyr Phe Cys Arg 120 115 Lys Gly Met Glu Thr Ile Met Asp Asp Glu Val Thr Lys Arg Phe 130 125 Ser Ala Glu Glu Leu Glu Ser Trp Asn Leu Leu Ser Arg Thr Asn 145 Tyr Asn Phe Gln Tyr Ile Ser Leu Arg Leu Thr Val Leu Trp Gly Leu Gly Val Leu Ile Arg Tyr Cys Phe Leu Leu Pro Leu Arg Ile 175 170 Ala Leu Ala Phe Thr Gly Ile Ser Leu Leu Val Val Gly Thr Thr Val Val Gly Tyr Leu Pro Asn Gly Arg Phe Lys Glu Phe Met Ser Lys His Val His Leu Met Cys Tyr Arg Ile Cys Val Arg Ala Leu 215 220 Thr Ala Ile Ile Thr Tyr His Asp Arg Glu Asn Arg Pro Arg Asn Gly Gly Ile Cys Val Ala Asn His Thr Ser Pro Ile Asp Val Ile 255 245 250 Ile Leu Ala Ser Asp Gly Tyr Tyr Ala Met Val Gly Gln Val His 265 Gly Gly Leu Met Gly Val Ile Gln Arg Ala Met Val Lys Ala Cys Pro His Val Trp Phe Glu Arg Ser Glu Val Lys Asp Arg His Leu 300 Val Ala Lys Arg Leu Thr Glu His Val Gln Asp Lys Ser Lys Leu 305 Pro Ile Leu Ile Phe Pro Glu Gly Thr Cys Ile Asn Asn Thr Ser 330 Val Met Met Phe Lys Lys Gly Ser Phe Glu Ile Gly Ala Thr Val Tyr Pro Val Ala Ile Lys Tyr Asp Pro Gln Phe Gly Asp Ala Phe 350 Trp Asn Ser Ser Lys Tyr Gly Met Val Thr Tyr Leu Leu Arg Met Met Thr Ser Trp Ala Ile Val Cys Ser Val Trp Tyr Leu Pro Pro 390 385

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Trp Asp Gly Gly Leu Lys Arg Glu Lys Val Lys Asp Thr Phe Lys 435

Glu Glu Gln Gln Lys Leu Tyr Ser Lys Met Ile Val Gly Asn His 450

Lys Asp Arg Ser Arg Ser 455
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<210> 249 <211> 1103 <212> DNA

<213> Homo sapiens

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 gga 1103
<210> 250
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<213> Homo sapiens
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 Leu Ala Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu
 Glu Met Glu Glu Lys Ala Ala Pro Leu Leu Lys Glu Glu Met Ala
                  50
 His His Ala Leu Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr
 Trp Glu Asp Lys Arg Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys
                                      85
 Ala Gln Asn Gly Ile Ala Ile Met Val Tyr Thr Asn Ser Ser Asn
 Thr Leu Tyr Trp Glu Leu Asn Gln Ala Val Arg Thr Gly Gly
                                      115
 Ser Arg Glu Leu Tyr Met Arg His Phe Pro Phe Lys Ala Leu His
                                                          135
                                      130
 Phe Tyr Leu Ile Arg Ala Leu Gln Leu Leu Arg Gly Ser Gly Gly
                                      145
 Cys Ser Arg Gly Pro Gly Glu Val Val Phe Arg Gly Val Gly Ser
 Leu Arg Phe Glu Pro Lys Arg Leu Gly Asp Ser Val Arg Leu Gly
                                      175
 Gln Phe Ala Ser Ser Ser Leu Asp Lys Ala Val Ala His Arg Phe
                 185
 Gly Glu Lys Arg Arg Gly Cys Val Ser Ala Pro Gly Val Gln Leu
                                      205
 Gly Ser Gln Ser Glu Gly Ala Ser Ser Leu Pro Pro Trp Lys Thr
                                      220
 Leu Leu Leu Ala Pro Gly Glu Phe Gln Leu Ser Gly Val Gly Pro
                 230
<210> 251
<211> 50
<212> DNA
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<213> Artificial Sequence

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<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens
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 gcctctggac ccgtgaaaga gctggtcggt tccgttggtg gggccgtgac 150
 tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
 tcaacacaac ccctcttgtc accatacagc cagaaggggg cactatcata 250
 gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300
 ctccctgaag ctcagcaaac tgaagaagaa tgactcaggg atctactatg 350
 tggggatata cageteatea etecageage cetecaceca ggagtaegtg 400
 ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450
 gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcatggaac 500
 atggggaaga ggatgtgatt tatacctgga aggccctggg gcaagcagcc 550
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tetcaagece cateettgee aggaagetet gtgaaggtge tgetgatgae 700 ceagatteet eeatggteet eetgtgtete etgttggtge eeeteetget 750 cagtetett gtactgggge tatttetttg gtttetgaag agaagagae 800 aagaagagta eattgaagag aagaagagag tggacatttg tegggaaact 850 cetaacatat geececatte tggagagaae acagagtaeg acacaateee 900 teacactaat agaacaatee taaaggaaga tecageaaat aeggtttaet 950

agtgcactcc cctaagtctc tgctca 1076

ccactgtgga aataccgaaa aagatggaaa atccccactc actgctcacg 1000 atgccagaca caccaaggct atttgcctat gagaatgtta tctagacagc 1050

<sup>&</sup>lt;210> 253 <211> 335

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 253

Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp

1				5					10					15
Gln	Leu	Thr	Gly	Ser 20	Ala	Ala	Ser	Gly	Pro 25	Val	Lys	Glu	Leu	Val 30
Gly	Ser	Val	Gly	Gly 35	Ala	Val	Thr	Phe	Pro 40	Leu	Lys	Ser	Lys	Val 45
Lys	Gln	Val	Asp	Ser 50	Ile	Val	Trp	Thr	Phe 55	Asn	Thr	Thr	Pro	Leu 60
Val	Thr	Ile	Gln	Pro 65	Glu	Gly	Gly	Thr	Ile 70	Ile	Val	Thr	Gln	Asn 75
Arg	Asn	Arg	Glu	Arg 80	Val	Asp	Phe	Pro	Asp 85	Gly	Gly	Tyr	Ser	Leu 90
Lys	Leu	Ser	Lys	Leu 95	Lys	Lys	Asn	Asp	Ser 100	Gly	Ile	Tyr	Tyr	Val 105
Gly	Ile	Tyr	Ser	Ser 110	Ser	Leu	Gln	Gln	Pro 115	Ser	Thr	Gln	Glu	Tyr 120
Val	Leu	His	Val	Tyr 125	Glu	His	Leu	Ser	Lys 130	Pro	Lys	Val	Thr	Met 135
Gly	Leu	Gln	Ser	Asn 140	Lys	Asn	Gly	Thr	Cys 145	Val	Thr	Asn	Leu	Thr 150
Cys	Cys	Met	Glu	His 155	Gly	Glu	Glu	Asp	Val 160	Ile	Tyr	Thr	Trp	Lys 165
Ala	Leu	Gly	Gln	Ala 170	Ala	Asn	Glu	Ser	His 175	Asn	Gly	Ser	Ile	Leu 180
Pro	Ile	Ser	Trp	Arg 185		Gly	Glu	Ser	Asp 190	Met	Thr	Phe	Ile	Cys 195
Val	Ala	Arg	Asn	Pro 200		Ser	Arg	Asn	Phe 205		Ser	Pro	Ile	Leu 210
Ala	Arg	Lys	Leu	Cys 215		Gly	Ala	Ala	Asp 220	Asp	Pro	Asp	Ser	Ser 225
Met	Val	Leu	Leu	Cys 230	Leu	Leu	Leu	Val	Pro 235	Leu	Leu	Leu	Ser	Leu 240
Phe	Val	Leu	Gly	Leu 245		Leu	Trp	Phe	Leu 250	Lys	Arg	Glu	Arg	Gln 255
Glu	Glu	Tyr	: Ile	Glu 260		Lys	Lys	Arg	Val 265	Asp	Ile	e Cys	Arg	Glu 270
Thr	Pro	Asn	ıle	275	Pro	His	Ser	Gly	Glu 280	Asn )	Thr	Glu	Tyr	Asp 285
Thr	: Ile	Pro	His	Thr 290		a Arg	Thr	: Ile	Let 295	Lys	Glu	a Asp	Pro	Ala 300
Asr	Thr	· Val	. Tyr	Ser 305		val	. Glu	ılle	9rc 310	) Lys	s Lys	Met	: Glu	Asn 315
Pro	His	Sei	Lev	ı Let	ı Thi	Met	Pro	Asp	Thi	r	Arg	J Let	ı Phe	Ala

Tyr Glu Asn Val Ile 335

<210> 254

<211> 1053

<212> DNA

<213> Homo sapiens

<400> 254

ctggttcccc aacatgcctc accctcatct atatcctttg gcagctcaca 50 gggtcagcag cctctggacc cgtgaaagag ctggtcggtt ccgttggtgg 100 ggccgtgact ttccccctga agtccaaagt aaagcaagtt gactctattg 150 tetggacett caacacaace cetettgtca ceatacagee agaagggge 200 actatcatag tgacccaaaa tcgtaatagg gagagagtag acttcccaga 250 tggaggctac tccctgaagc tcagcaaact gaagaagaat gactcaggga 300 totactatgt ggggatatac agotoatoac tocagoagoo etccaccoag 350 gagtacgtgc tgcatgtcta cgagcacctg tcaaagccta aagtcaccat 400 gggtctgcag agcaataaga atggcacctg tgtgaccaat ctgacatgct 450 gcatggaaca tggggaagag gatgtgattt atacctggaa ggccctgggg 500 caagcagcca atgagtccca taatgggtcc atcctcccca tctcctggag 550 atggggagaa agtgatatga ccttcatctg cgttgccagg aaccctgtca 600 gcagaaactt ctcaagcccc atccttgcca ggaagctctg tgaaggtgct 650 gctgatgacc cagattcctc catggtcctc ctgtgtctcc tgttggtgcc 700 cctcctqctc agtctctttg tactggggct atttctttgg tttctgaaga 750 gagagagaca agaagagtac attgaagaga agaagagagt ggacatttgt 800 cgggaaactc ctaacatatg cccccattct ggagagaaca cagagtacga 850 cacaatcct cacactaata gaacaatcct aaaggaagat ccagcaaata 900 cggtttactc cactgtggaa ataccgaaaa agatggaaaa tccccactca 950 ctgctcacga tgccagacac accaaggcta tttgcctatg agaatgttat 1000 ctagacagca gtgcactccc ctaagtctct gctcaaaaaa aaaaaaaaa 1050

<210> 255

aaa 1053

<211> 860

<212> DNA

<213> Homo sapiens

<400> 255

gaaagacgtg gtcctgacag acagacaatc ctattcccta ccaaaatgaa 50

gatgctgctg ctgctgtgtt tgggactgac cctagtctgt gtccatgcag 100 aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150 gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200 acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250 ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300 tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350 tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400 ttatggctca cctcattaac gaaaaggatg gggaaacctt ccagctgatg 450 gggctctatg gccgagaacc agatttgagt tcagacatca aggaaaggtt 500 tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550 tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600 gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650 tectatecat acageatece cagtataaat tetgtgatet geattecate 700 ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750 acctcatcaa gaatcaaaga cttctttaaa tttctctttg atacaccctt 800 gacaattttt catgaaatta ttcctcttcc tgttcaataa atgattaccc 850 ttgcacttaa 860

<210> 256

<211> 180

<212> PRT

<213> Homo sapiens

<400> 256

Met Lys Met Leu Leu Leu Cys Leu Gly Leu Thr Leu Val Cys 1 5 10 15

Val His Ala Glu Glu Ala Ser Ser Thr Gly Arg Asn Phe Asn Val 20 25 30

Glu Lys Ile Asn Gly Glu Trp His Thr Ile Ile Leu Ala Ser Asp 35 40 45

Lys Arg Glu Lys Ile Glu Glu His Gly Asn Phe Arg Leu Phe Leu 50 55 60

Glu Gln Ile His Val Leu Glu Asn Ser Leu Val Leu Lys Val His
65 70 75

Thr Val Arg Asp Glu Glu Cys Ser Glu Leu Ser Met Val Ala Asp 80 85 90

Lys Thr Glu Lys Ala Gly Glu Tyr Ser Val Thr Tyr Asp Gly Phe 95 100 105

Asn Thr Phe Thr Ile Pro Lys Thr Asp Tyr Asp Asn Phe Leu Met 110 115 120

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Ala His Leu Ile Asn Glu Lys Asp Gly Glu Thr Phe Gln Leu Met
125 130 135
```

Gly Leu Tyr Gly Arg Glu Pro Asp Leu Ser Ser Asp Ile Lys Glu 140 145 150

Arg Phe Ala Gln Leu Cys Glu Glu His Gly Ile Leu Arg Glu Asn  $155 \hspace{1.5cm} 160 \hspace{1.5cm} 165$ 

Ile Ile Asp Leu Ser Asn Ala Asn Arg Cys Leu Gln Ala Arg Glu 170 175 180

<210> 257

<211> 766

<212> DNA

<213> Homo sapiens

<400> 257

ggctcgagcg tttctgagcc aggggtgacc atgacctgct gcgaaggatg 50 gacatcctgc aatggattca gcctgctggt tctactgctg ttaggagtag 100 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaattt 150 tctcaaaacc ccatctcttg ctttgagtgg tggttcccag gaattatagg 200 agcaggtctg atggccattc cagcaacaac aatgtccttg acagcaagaa 250 aaagagcgtg ctgcaacaac agaactggaa tgtttctttc atcatttttc 300 agtgtgatca cagtcattgg tgctctgtat tgcatgctga tatccatcca 350 ggctctctta aaaggtcctc tcatgtgtaa ttctccaagc aacagtaatg 400 ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450 ttcaacttgc agtggttttt caatgactct tgtgcacctc ctactggttt 500 caataaaccc accagtaacg acaccatggc gagtggctgg agagcatcta 550 gtttccactt cgattctgaa gaaaacaaac ataggcttat ccacttctca 600 gtatttttag gtctattgct tgttggaatt ctggaggtcc tgtttgggct 650 cagtcagata gtcatcggtt tccttggctg tctgtgtgga gtctctaagc 700 gaagaagtca aattgtgtag tttaatggga ataaaatgta agtatcagta 750 gtttgaaaaa aaaaaa 766

<210> 258

<211> 229

<212> PRT

<213> Homo sapiens

<400> 258

Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu 1 5 10 15

Leu Val Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu 20 25 30

Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile

Ser Cys Phe Glu Trp Trp Phe Pro Gly Ile Ile Gly Ala Gly Leu Met Ala Ile Pro Ala Thr Thr Met Ser Leu Thr Ala Arg Lys Arg Ala Cys Cys Asn Asn Arg Thr Gly Met Phe Leu Ser Ser Phe Phe 85 80 Ser Val Ile Thr Val Ile Gly Ala Leu Tyr Cys Met Leu Ile Ser Ile Gln Ala Leu Leu Lys Gly Pro Leu Met Cys Asn Ser Pro Ser 110 115 120 Asn Ser Asn Ala Asn Cys Glu Phe Ser Leu Lys Asn Ile Ser Asp 130 135 Ile His Pro Glu Ser Phe Asn Leu Gln Trp Phe Phe Asn Asp Ser 140 150 Cys Ala Pro Pro Thr Gly Phe Asn Lys Pro Thr Ser Asn Asp Thr Met Ala Ser Gly Trp Arg Ala Ser Ser Phe His Phe Asp Ser Glu 180 Glu Asn Lys His Arg Leu Ile His Phe Ser Val Phe Leu Gly Leu 185 190 Leu Leu Val Gly Ile Leu Glu Val Leu Phe Gly Leu Ser Gln Ile 205 Val Ile Gly Phe Leu Gly Cys Leu Cys Gly Val Ser Lys Arg Arg

Ser Gln Ile Val

<210> 259

<211> 434

<212> DNA

<213> Homo sapiens

<400> 259

gtcgaatcca aatcactcat tgtgaaagct gagctcacag ccgaataagc 50 caccatgagg ctgtcagtgt gtctcctgat ggtctcgctg gccctttgct 100 gctaccaggc ccatgctctt gtctgcccag ctgttgcttc tgagatcaca 150 gtcttcttat tcttaagtga cgctgcggta aacctccaag ttgccaaact 200 taatccacct ccagaagctc ttgcagccaa gttggaagtg aagcactgca 250 ccgatcagat atctttaag aaacgactct cattgaaaaa gtcctggtgg 300 aaatagtgaa aaaatgtggt gtgtgacatg taaaaatgct caacctggtt 350 tccaaagtct ttcaacgaca ccctgatctt cactaaaaat tgtaaaggtt 400

tcaacacgtt gctttaataa atcacttgcc ctgc 434

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<210> 260
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<211> 83

<212> PRT

<213> Homo sapiens

<400> 260

Met Arg Leu Ser Val Cys Leu Leu Met Val Ser Leu Ala Leu Cys 1 10 15

Cys Tyr Gln Ala His Ala Leu Val Cys Pro Ala Val Ala Ser Glu  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Ile Thr Val Phe Leu Phe Leu Ser Asp Ala Ala Val Asn Leu Gln 35 40 45

Val Ala Lys Leu Asn Pro Pro Pro Glu Ala Leu Ala Ala Lys Leu
50 55 60

Glu Val Lys His Cys Thr Asp Gln Ile Ser Phe Lys Lys Arg Leu 65 70 75

Ser Leu Lys Lys Ser Trp Trp Lys 80

<210> 261

<211> 636

<212> DNA

<213> Homo sapiens

<400> 261

atccgttcte tgcgctgcca gctcaggtga gccctcgcca aggtgacctc 50 gcaggacact ggtgaaggag cagtgaggaa cctgcagagt cacacagttg 100 ctgaccaatt gagctgtgag cctggagcag atccgtgggc tgcagacccc 150 cgccccagtg cctctcccc tgcagccctg cccctcgaac tgtgacatgg 200 agagagtgac cctggcctt ctcctactgg caggcctgac tgccttggaa 250 gccaatgacc catttgccaa taaagacgat cccttctact atgactggaa 300 aaacctgcag ctgagcggac tgatctgcgg agggctcctg gccattgctg 350 ggatcgcggc agttctgagt ggcaaatgca aatacaagag cagccagaag 400 cagcacagtc ctgtacctga gaaggccatc ccactcatca ctccaggctc 450 tgccactact tgctgagcac aggactgcc tccagggatg gcctgaagcc 500 taacactggc ccccagcacc tcctccctg ggaggcctta tcctcaagga 550 aggacttctc tccaagggca ggctgttagg cccctttctg atcaggagc 600 ttctttatga attaaactcg ccccaccacc ccctca 636

<sup>&</sup>lt;210> 262

<sup>&</sup>lt;211> 89

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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<400> 262
Met Glu Arg Val Thr Leu Ala Leu Leu Leu Ala Gly Leu Thr
Ala Leu Glu Ala Asn Asp Pro Phe Ala Asn Lys Asp Asp Pro Phe
 Tyr Tyr Asp Trp Lys Asn Leu Gln Leu Ser Gly Leu Ile Cys Gly
 Gly Leu Leu Ala Ile Ala Gly Ile Ala Ala Val Leu Ser Gly Lys
                  50
Cys Lys Tyr Lys Ser Ser Gln Lys Gln His Ser Pro Val Pro Glu
 Lys Ala Ile Pro Leu Ile Thr Pro Gly Ser Ala Thr Thr Cys
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<210> 263 <211> 1676 <212> DNA

<213> Homo sapiens

<400> 263 ggagaagagg ttgtgtggga caagctgctc ccgacagaag gatgtcgctg 50 ctgagcctgc cctggctggg cctcagaccg gtggcaatgt ccccatggct 100 actectgetg etggttgtgg geteetgget actegeeege ateetggett 150 ggacctatgc cttctataac aactgccgcc ggctccagtg tttcccacag 200 cccccaaaac ggaactggtt ttggggtcac ctgggcctga tcactcctac 250 agaggagggc ttgaaggact cgacccagat gtcggccacc tattcccagg 300 gctttacggt atggctgggt cccatcatcc ccttcatcgt tttatgccac 350 cctgacacca tccggtctat caccaatgcc tcagctgcca ttgcacccaa 400 ggataatete tteateaggt teetgaagee etggetggga gaagggatae 450 tgctgagtgg cggtgacaag tggagccgcc accgtcggat gctgacgccc 500 geetteeatt teaacateet gaagteetat ataacgatet teaacaagag 550 tgcaaacatc atgcttgaca agtggcagca cctggcctca gagggcagca 600 gtcgtctgga catgtttgag cacatcagcc tcatgacctt ggacagtcta 650 cagaaatgca tcttcagctt tgacagccat tgtcaggaga ggcccagtga 700 atatattgcc accatcttgg agctcagtgc ccttgtagag aaaagaagcc 750 agcatatect ceageacatg gaetttetgt attacetete ceatgaeggg 800 cggcgcttcc acagggcctg ccgcctggtg catgacttca cagacgctgt 850 catcegggag eggegtegea eceteceeae teagggtatt gatgattttt 900 tcaaagacaa agccaagtcc aagactttgg atttcattga tgtgcttctg 950 ctgagcaagg atgaagatgg gaaggcattg tcagatgagg atataagagc 1000 agaggctgac accttcatgt ttggaggcca tgacaccacg gccagtggcc 1050 tetectgggt cctgtacaac cttgegaggc acccagaata ccaggagcgc 1100 tgccgacagg aggtgcaaga gcttctgaag gaccgcgatc ctaaagagat 1150 tgaatgggac gacctggccc agctgcctt cctgaccatg tgcgtgaagg 1200 agagcctgag gttacatccc ccagctcct tcatctcccg atgctgcacc 1250 caggacattg ttctcccaga tggccgagtc atccccaaag gcattacctg 1300 cctcatcgat attatagggg tccatcacaa cccaactgtg tggccggatc 1350 ctgaggtcta cgacccttc cgctttgacc cagagaacag caaggggagg 1400 tcacctctgg ctttattcc tttctccgca gggcccagga actgcatcgg 1450 gcaggcgttc gccatggcg agatgaaagt ggtcctggcg ttgatgctgc 1500 tgcacttccg gttcctgcca gaccacctg cggctttgg ctgcgggtgg agcccctgaa 1600 tgtaggcttg cagtgactt ctgacccatc cacctgttt tttgcagatt 1650 qtcatqaata aaacggtgct gtcaaa 1676

<210> 264

<211> 524

<212> PRT

<213> Homo sapiens

<400> 264

Met Ser Leu Leu Ser Leu Pro Trp Leu Gly Leu Arg Pro Val Ala 1 5 10 15

Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu 20 25 30

Leu Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Arg Arg Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe 50 55 60

Trp Gly His Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys
65 70 75

Asp Ser Thr Gln Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val $80 \\ 85 \\ 90$ 

Trp Leu Gly Pro Ile Ile Pro Phe Ile Val Leu Cys His Pro Asp

Thr Ile Arg Ser Ile Thr Asn Ala Ser Ala Ala Ile Ala Pro Lys 110 115 120

Asp Asn Leu Phe Ile Arg Phe Leu Lys Pro Trp Leu Gly Glu Gly 125 130 135

Ile Leu Leu Ser Gly Gly Asp Lys Trp Ser Arg His Arg Arg Met Leu Thr Pro Ala Phe His Phe Asn Ile Leu Lys Ser Tyr Ile Thr Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp Lys Trp Gln His 170 Leu Ala Ser Glu Gly Ser Ser Arg Leu Asp Met Phe Glu His Ile Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe Ser Phe Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr Ile Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg Phe His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val Ile Arg Glu Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp 280 275 Phe Phe Lys Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp Val Leu Leu Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp 315 305 Glu Asp Ile Arg Ala Glu Ala Asp Thr Phe Met Phe Gly Gly His 325 Asp Thr Thr Ala Ser Gly Leu Ser Trp Val Leu Tyr Asn Leu Ala 335 Arg His Pro Glu Tyr Gln Glu Arg Cys Arg Gln Glu Val Gln Glu 355 Leu Leu Lys Asp Arg Asp Pro Lys Glu Ile Glu Trp Asp Asp Leu Ala Gln Leu Pro Phe Leu Thr Met Cys Val Lys Glu Ser Leu Arg 385 Leu His Pro Pro Ala Pro Phe Ile Ser Arg Cys Cys Thr Gln Asp Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys Gly Ile Thr Cys 415 410 Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr Val Trp Pro 430 Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu Asn Ser 450 445

```
Lys Gly Arg Ser Pro Leu Ala Phe Ile Pro Phe Ser Ala Gly Pro 465

Arg Asn Cys Ile Gly Gln Ala Phe Ala Met Ala Glu Met Lys Val 480

Val Leu Ala Leu Met Leu Leu His Phe Arg Phe Leu Pro Asp His 495

Thr Glu Pro Arg Arg Lys Leu Glu Leu Ile Asn Val Gly Leu Gln

Gly Leu Trp Leu Arg Val Glu Pro Leu Asn Val Gly Leu Gln
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<210> 265

<211> 584

<212> DNA

<213> Homo sapiens

<400> 265 caacagaagc caagaaggaa gccgtctatc ttgtggcgat catgtataag 50 ctggcctcct gctgtttgct tttcacagga ttcttaaatc ctctctatc 100 tcttcctctc cttgactcca gggaaatatc ctttcaactc tcagcacctc 150 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200 cagatattgc cagagatgct gggtgcagaa agaggggata ttctcaggaa 250 agcagactca agtaccaaca ttttaaccc aagaggaaat ttgagaaagt 300 ttcaggatt ctctggacaa gatcctaaca ttttactgag tcatcttttg 350 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400 gaaatactgt gtctgaagtg aaataagcat ctgttagtca gctcagaaac 450 acccatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500 tggaagaaaa ctaggcaaac tacaccctgt tcattgttac ctggaaaata 550

<210> 266

<211> 124

<212> PRT

<213> Homo sapiens

<400> 266

Met Tyr Lys Leu Ala Ser Cys Cys Leu Leu Phe Thr Gly Phe Leu
1 5 10 15

aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

Asn Pro Leu Leu Ser Leu Pro Leu Leu Asp Ser Arg Glu Ile Ser 20 25 30

Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu 35 40 45

Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu
50 55 60

Gly Ala Glu Arg Gly Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr
65 70 75

Asn Ile Phe Asn Pro Arg Gly Asn Leu Arg Lys Phe Gln Asp Phe 80 85 90

Ser Gly Gln Asp Pro Asn Ile Leu Leu Ser His Leu Leu Ala Arg 95 100 105

Ile Trp Lys Pro Tyr Lys Lys Arg Glu Thr Pro Asp Cys Phe Trp 110 115

Lys Tyr Cys Val

<210> 267

<211> 654

<212> DNA

<213> Homo sapiens

<400> 267

gaacattttt agttcccaag gaatgtacat cagccccacg gaagctaggc 50
cacctctggg atggggttgc tggtttaaaa caaacgccag tcatcctata 100
taaggacctg acagccacca ggcaccacct ccgccaggaa ctgcaggccc 150
acctgtctgc aacccagctg aggccatgcc ctccccaggg accgtctgca 200
gcctcctgct cctcggcatg ctctggctgg acttggccat ggcaggctcc 250
agcttcctga gccctgaaca ccagagagtc cagcagagaa aggagtcgaa 300
gaagccacca gccaagctgc agccccgagc tctagcaggc tggctccgcc 350
cggaagatgg aggtcaagca gaaggggcag aggatgaact ggaagtccgg 400
ttcaacgccc cctttgatgt tggaatcaag ctgtcagggg ttcagtacca 450
gcagcacagc caggccctgg ggaagttct tcaggacatc ctctgggaag 500
aggccaaaga ggccccagcc gacaagtgat cgcccacaag ccttactcac 550
ctctctctaa gtttagaagc gctcatctgg cttttcgctt gcttctgcag 600
caactcccac gactgttgta caagctcagg aggcgaataa atgttcaaac 650

tgta 654 <210> 268

<211> 117

<212> PRT

<213> Homo sapiens

<400> 268

Met Pro Ser Pro Gly Thr Val Cys Ser Leu Leu Leu Gly Met
1 5 10 15

Leu Trp Leu Asp Leu Ala Met Ala Gly Ser Ser Phe Leu Ser Pro  $20 \\ 25 \\ 30$ 

Glu His Gln Arg Val Gln Gln Arg Lys Glu Ser Lys Lys Pro Pro 35 40 45

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Ala Lys Leu Gln Pro Arg Ala Leu Ala Gly Trp Leu Arg Pro Glu
Asp Gly Gly Gln Ala Glu Gly Ala Glu Asp Glu Leu Glu Val Arg
Phe Asn Ala Pro Phe Asp Val Gly Ile Lys Leu Ser Gly Val Gln
                                     85
Tyr Gln Gln His Ser Gln Ala Leu Gly Lys Phe Leu Gln Asp Ile
Leu Trp Glu Glu Ala Lys Glu Ala Pro Ala Asp Lys
```

<210> 269 <211> 1332

<212> DNA

<213> Homo sapiens

<400> 269 cggccacage tggcatgete tgeetgateg ceateetget gtatgteete 50 gtccagtacc tcgtgaaccc cggggtgctc cgcacggacc ccagatgtca 100 agaatatgaa cacgtggctg ctgttcctcc ccctgttccc ggtgcaggtg 150 cagaccetga tagtegtgat categggatg etegtgetee tgetggaett 200 tcttggcttg gtgcacctgg gccagctgct catcttccac atctacctga 250 gtatgtcccc caccctaagc ccccgatccc cccaaggctg ggtggtcaga 300 gctgctcatc ttacacctct acttgagtat gtccctaacc ctgagccccc 350 cacgcctggg gccagagtct ttgtcccccg tgtgcgcatg tgttcagggt 400 cagcetetee cagaagtgag atcatggaca aaaagggcaa atcacaggaa 450 gaaattaaat ccatgaggac ccagcaggcc cagcaagaag ctgaactcac 500 gccgagacct gcaggagtgg tgccaggtgc ttgaagtaac aagtttaaaa 550 tgttcagaga caatggaatg gaatctatta ggcaagaaca ggacattatg 600 aaataaggac aggtggactt ccaaaaacac aagtagaaat tctaacaatg 650 aaatatatta caggcaggtc acccactaac caaacaactg aagcgagagc 700 tgtggtcttg cttggtctca cagtgggcac agcggtaggc ggtcagtcat 750 gttgctgaac gacggagggt aaactcccca gccccaagaa aacctgtgtt 800 ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850 tgggccagct gcaaagcgtc ttccattctc tgggcagtgg tggccccgag 900 gctgtggcct ctcagggggt ttctgtggac acgggcagca gagtgtgtcc 950 aggccagccc ccaagaatgc cctgctcctg acagcttggc caacccctgg 1000 tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050 cagagcatec ectgectgea gttgtggeaa gaacgeecag etcagaatga 1100 acacacecea ecaagageet ecttgtteat aaceaeaggt taceetacaa 1150 aceaetgtee ecaeaaace etggggatgt tttaaaacae acacetetaa 1200 egeatatett acagteaetg ttgtettgee tgagggttga attttttta 1250 atgaaagtge aatgaaaate actggattaa ateetaegga eacagagetg 1300 aaaaaaaaaa aaaaaaaaa aaaaaaaaaa aa 1332

<210> 270

<211> 142

<212> PRT

<213> Homo sapiens

<400> 270

Met Asn Thr Trp Leu Leu Phe Leu Pro Leu Phe Pro Val Gln Val 1 5 10 15

Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu 20 25 30

Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His 35 40 45

Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln 50 55 60

Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
65 70 75

Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val 80 85 90

Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu 95 100 105

Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met
110 115 120

Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro 125 130 135

Ala Gly Val Val Pro Gly Ala 140

<210> 271

<211> 1484

<212> DNA

<213> Homo sapiens

<400> 271

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gatagtttct gtgccaggtt ctgggctaaa ccatggagat aaaaagaaga 1450
gtaaaataca cttcccgacc ttaaggatct gaaa 1484
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Leu Leu Ser Ala Ile Leu Ser Met Leu Ser Leu Ser Phe Ser Thr

Thr Ser Leu Leu Ser Asn Tyr Trp Phe Val Gly Thr Gln Lys Val

<sup>&</sup>lt;210> 272

<sup>&</sup>lt;211> 285

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 272

Met Ala Lys Met Glu Leu Ser Lys Ala Phe Ser Gly Gln Arg Thr 1 5 10 15

Į.

35 40 45

Pro Lys Pro Leu Cys Glu Lys Gly Leu Ala Ala Lys Cys Phe Asp Met Pro Val Ser Leu Asp Gly Asp Thr Asn Thr Ser Thr Gln Glu Val Val Gln Tyr Asn Trp Glu Thr Gly Asp Asp Arg Phe Ser Phe 85 Arg Ser Phe Arg Ser Gly Met Trp Leu Ser Cys Glu Glu Thr Val Glu Glu Pro Gly Glu Arg Cys Arg Ser Phe Ile Glu Leu Thr Pro 110 Pro Ala Lys Arg Gly Glu Lys Gly Leu Leu Glu Phe Ala Thr Leu Gln Gly Pro Cys His Pro Thr Leu Arg Phe Gly Gly Lys Arg Leu 140 Met Glu Lys Ala Ser Leu Pro Ser Pro Pro Leu Gly Leu Cys Gly Lys Asn Pro Met Val Ile Pro Gly Asn Ala Asp His Leu His Arg Thr Ser Ile His Gln Leu Pro Pro Ala Thr Asn Arg Leu Ala Thr 190 185 His Trp Glu Pro Cys Leu Trp Ala Gln Thr Glu Arg Leu Cys Cys 200 205 Cys Phe Leu Cys Pro Val Arg Ser Pro Gly Asp Gly Gly Pro His 220 225 Asp Val Phe Thr Ser Leu Pro Ser Asp Cys Gln Leu Gly Ser Arg 230 Arg Leu Glu Thr Thr Cys Leu Glu Leu Trp Leu Gly Leu Leu His Gly Leu Ala Leu Leu His Leu Leu His Gly Val Gly Cys His His 270 260 265

<210> 273

<211> 1158

<212> DNA

<213> Homo sapiens

<400> 273

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Leu Gln His Val His Gln Asp Gly Ala Gly Val Gln Val Gln Ala

accaaccagg gtagtggcat ggagcaccgt aaccatctgt gcttctgtga 250 tctctatgac agagccactt ctccacctct gaaatgttcc ctgctctgaa 300 atctggcatg agatggcaca ggtgaccacg cagaagccac cagaatcttg 350 cctgccctat tcctcctccc aagtctgttc tcttattgtc aacctcagca 400 caacaggctg gcgccaatgg cattacagag aaagcaatct gtgtggctag 450 tgggcagatt accatgcaag ccccaggaga aatggaggag ctttgtagcc 500 acctccctgt cagccagtat taacatgtcc ccttccccct gccccgccgt 550 agattcagga cattcgcccc tgtgtgccac caaaccagga ctttcccctt 600 ggcttggcat ccctggctct ctcctggtac ccagcaagac gtctgttcca 650 gggcagtgta gcatctttca agctccgtta ctatggcgat ggccatgatg 700 ttacaatccc acttgcctga ataatcaagt gggaagggga agcagaggga 750 aatggggcca tgtgaatgca gctgctctgt tctccctacc ctgaggaaaa 800 accaaaggga agcaacagga acttctgcaa ctggttttta tcggaaagat 850 catcctgcct gcagatgctg ttgaaggggc acaagaaatg tagctggaga 900 agattgatga aagtgcaggt gtgtaaggaa atagaacagt ctgctgggag 950 tcagacctgg aattctgatt ccaaactctt tattactttg ggaagtcact 1000 cagcctcccc gtagccatct ccagggtgac ggaacccagt gtattacctg 1050 ctggaaccaa ggaaactaac aatgtaggtt actagtgaat accccaatgg 1100 tttctccaat tatgcccatg ccaccaaaac aataaaacaa aattctctaa 1150 cactgaaa 1158

<210> 274

<211> 86

<212> PRT

<213> Homo sapiens

<400> 274

Met Trp Leu Pro Leu Gly Leu Leu Ser Leu Cys Leu Ser Pro Leu
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Pro Ile Leu Ser Ser Pro Ser Leu Lys Ser Gln Ala Cys Gln Gln 20 25 30

Leu Leu Trp Thr Leu Pro Ser Pro Leu Val Ala Phe Arg Ala Asn 35 40 45

Arg Thr Thr Tyr Val Met Asp Val Ser Thr Asn Gln Gly Ser Gly 50 55 60

Met Glu His Arg Asn His Leu Cys Phe Cys Asp Leu Tyr Asp Arg
65 70 75

Ala Thr Ser Pro Pro Leu Lys Cys Ser Leu Leu 80 85

<210> 275 <211> 2694 <212> DNA <213> Homo sapiens

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Asn Lys Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser

<sup>&</sup>lt;210> 276

<sup>&</sup>lt;211> 131

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 276

Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala 1 5 10 15

Ile Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr
20 25 30

35 40 45

Pro Ile Pro Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp 50 55 60

Ala Met Ser Asn Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr 65 70 75

Gly Ile Val Val Ser Ala Phe Gly Leu Pro Ile Val Phe Ala Arg 80 85 90

Ala His Leu Ile Glu Trp Gly Ala Cys Ala Leu Val Leu Thr Gly 95 100 105

Asn Thr Val Ile Phe Ala Thr Ile Leu Gly Phe Phe Leu Val Phe 110 115 120

Gly Ser Asn Asp Asp Phe Ser Trp Gln Gln Trp 125 130

<210> 277

<211> 4104

<212> DNA

<213> Homo sapiens

<400> 277

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<210> 278 <211> 522 <212> PRT <213> Homo sapiens

<400> 278 Met Asp Phe Leu Leu Gly Leu Cys Leu Tyr Trp Leu Leu Arg Arg Pro Ser Gly Val Val Leu Cys Leu Leu Gly Ala Cys Phe Gln Met Leu Pro Ala Ala Pro Ser Gly Cys Pro Gln Leu Cys Arg Cys Glu Gly Arg Leu Leu Tyr Cys Glu Ala Leu Asn Leu Thr Glu Ala Pro His Asn Leu Ser Gly Leu Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Ser Glu Leu Arg Ala Gly Gln Phe Thr Gly Leu Met Gln Leu Thr Trp Leu Tyr Leu Asp His Asn His Ile Cys Ser Val Gln Gly Asp Ala Phe Gln Lys Leu Arg Arg Val Lys Glu Leu Thr Leu 110 115 Ser Ser Asn Gln Ile Thr Gln Leu Pro Asn Thr Thr Phe Arg Pro Met Pro Asn Leu Arg Ser Val Asp Leu Ser Tyr Asn Lys Leu Gln 150 Ala Leu Ala Pro Asp Leu Phe His Gly Leu Arg Lys Leu Thr Thr 160 Leu His Met Arg Ala Asn Ala Ile Gln Phe Val Pro Val Arg Ile 175 Phe Gln Asp Cys Arg Ser Leu Lys Phe Leu Asp Ile Gly Tyr Asn Gln Leu Lys Ser Leu Ala Arg Asn Ser Phe Ala Gly Leu Phe Lys Leu Thr Glu Leu His Leu Glu His Asn Asp Leu Val Lys Val Asn 220 Phe Ala His Phe Pro Arg Leu Ile Ser Leu His Ser Leu Cys Leu Arg Arg Asn Lys Val Ala Ile Val Val Ser Ser Leu Asp Trp Val 250 245 Trp Asn Leu Glu Lys Met Asp Leu Ser Gly Asn Glu Ile Glu Tyr Met Glu Pro His Val Phe Glu Thr Val Pro His Leu Gln Ser Leu

280

285

275

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Gln Leu Asp Ser Asn Arg Leu Thr Tyr Ile Glu Pro Arg Ile Leu
Asn Ser Trp Lys Ser Leu Thr Ser Ile Thr Leu Ala Gly Asn Leu
Trp Asp Cys Gly Arg Asn Val Cys Ala Leu Ala Ser Trp Leu Ser
                                                         330
Asn Phe Gln Gly Arg Tyr Asp Gly Asn Leu Gln Cys Ala Ser Pro
                 335
Glu Tyr Ala Gln Gly Glu Asp Val Leu Asp Ala Val Tyr Ala Phe
                                     355
                 350
His Leu Cys Glu Asp Gly Ala Glu Pro Thr Ser Gly His Leu Leu
Ser Ala Val Thr Asn Arg Ser Asp Leu Gly Pro Pro Ala Ser Ser
                                                         390
                                     385
Ala Thr Thr Leu Ala Asp Gly Gly Glu Gly Gln His Asp Gly Thr
                 395
Phe Glu Pro Ala Thr Val Ala Leu Pro Gly Gly Glu His Ala Glu
Asn Ala Val Gln Ile His Lys Val Val Thr Gly Thr Met Ala Leu
                                     430
Ile Phe Ser Phe Leu Ile Val Val Leu Val Leu Tyr Val Ser Trp
Lys Cys Phe Pro Ala Ser Leu Arg Gln Leu Arg Gln Cys Phe Val
Thr Gln Arg Arg Lys Gln Lys Gln Lys Gln Thr Met His Gln Met
Ala Ala Met Ser Ala Gln Glu Tyr Tyr Val Asp Tyr Lys Pro Asn
                 485
His Ile Glu Gly Ala Leu Val Ile Ile Asn Glu Tyr Gly Ser Cys
                                                          510
                                     505
Thr Cys His Gln Gln Pro Ala Arg Glu Cys Glu Val
<210> 279
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<sup>&</sup>lt;211> 46

<sup>\*&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

<sup>&</sup>lt;400> 279

tccqtqcagg gggacgcctt tcagaaactg cgccgagtta aggaac 46

<sup>&</sup>lt;210> 280

<sup>&</sup>lt;211> 709

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

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<210> 281 <211> 229 <212> PRT

<213> Homo sapiens

<400> 281

Met Gly Val Leu Gly Arg Val Leu Leu Trp Leu Gln Leu Cys Ala 1 5 10

Leu Thr Gln Ala Val Ser Lys Leu Trp Val Pro Asn Thr Asp Phe 20 25 30

Asp Val Ala Ala Asn Trp Ser Gln Asn Arg Thr Pro Cys Ala Gly
35 40 45

Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
50 55 60

Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly 65 70

Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val 80 85 90

Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg 95 100 105

Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser 110 115 120

Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val 125 130 135

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Pro Cys Arg His Asp Asp Val Phe Phe Pro Pro Ser Ala Ser Phe
Arg Val Gly Leu Gly Pro Gly Ala Ser Pro Val Arg Val Arg Ser
Ile Ser Ala Leu Gly Arg Thr Phe Thr Arg Asp Glu Asp Leu Ala
                                    175
Val Phe Leu Ala Ser Arg Ala Gly Arg Leu Arg Phe His Gly Pro
Gly Ala Leu Ser Val Gly Pro Glu Asp Cys Ala Asp Pro Ser Gly
Cys Val Cys Gly Asn Ala Glu Ala Gln Pro Trp Ile Cys Ala Ala
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Leu Leu Gln Pro

<210> 282 <211> 644 <212> DNA

<213> Homo sapiens

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<211> 77

<212> PRT

<213> Homo sapiens

<400> 283 Met Gly Pro Val Lys Gln Leu Lys Arg Met Phe Glu Pro Thr Arg 10

Leu Ile Ala Thr Ile Met Val Leu Leu Cys Phe Ala Leu Thr Leu

20 25 30

Cys Ser Ala Phe Trp Trp His Asn Lys Gly Leu Ala Leu Ile Phe 35 40 45

Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe 50 55 60

Ile Pro Phe Ala Arg Asp Ala Val Lys Lys Cys Phe Ala Val Cys 65 70 75

Leu Ala

<210> 284

<211> 2623

<212> DNA

<213> Homo sapiens

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<210> 285

<211> 477 <212> PRT <213> Homo sapiens

<400> 285 Met Thr Ser Lys Phe Ile Leu Val Ser Phe Ile Leu Ala Ala Leu Ser Leu Ser Thr Thr Phe Ser Leu Gln Leu Asp Gln Gln Lys Val 20 Leu Leu Val Ser Phe Asp Gly Phe Arg Trp Asp Tyr Leu Tyr Lys Val Pro Thr Pro His Phe His Tyr Ile Met Lys Tyr Gly Val His Val Lys Gln Val Thr Asn Val Phe Ile Thr Lys Thr Tyr Pro Asn His Tyr Thr Leu Val Thr Gly Leu Phe Ala Glu Asn His Gly Ile Val Ala Asn Asp Met Phe Asp Pro Ile Arg Asn Lys Ser Phe Ser Leu Asp His Met Asn Ile Tyr Asp Ser Lys Phe Trp Glu Glu Ala Thr Pro Ile Trp Ile Thr Asn Gln Arg Ala Gly His Thr Ser Gly 130 125 Ala Ala Met Trp Pro Gly Thr Asp Val Lys Ile His Lys Arg Phe Pro Thr His Tyr Met Pro Tyr Asn Glu Ser Val Ser Phe Glu Asp 165 155 Arg Val Ala Lys Ile Val Glu Trp Phe Thr Ser Lys Glu Pro Ile 170 Asn Leu Gly Leu Leu Tyr Trp Glu Asp Pro Asp Asp Met Gly His His Leu Gly Pro Asp Ser Pro Leu Met Gly Pro Val Ile Ser Asp 210 205 Ile Asp Lys Lys Leu Gly Tyr Leu Ile Gln Met Leu Lys Lys Ala 215 Lys Leu Trp Asn Thr Leu Asn Leu Ile Ile Thr Ser Asp His Gly 235 230 Met Thr Gln Cys Ser Glu Glu Arg Leu Ile Glu Leu Asp Gln Tyr 250 Leu Asp Lys Asp His Tyr Thr Leu Ile Asp Gln Ser Pro Val Ala Ala Ile Leu Pro Lys Glu Gly Lys Phe Asp Glu Val Tyr Glu Ala Leu Thr His Ala His Pro Asn Leu Thr Val Tyr Lys Lys Glu Asp

295 300 290 Val Pro Glu Arg Trp His Tyr Lys Tyr Asn Ser Arg Ile Gln Pro 315 305 Ile Ile Ala Val Ala Asp Glu Gly Trp His Ile Leu Gln Asn Lys 330 325 Ser Asp Asp Phe Leu Leu Gly Asn His Gly Tyr Asp Asn Ala Leu 345 340 335 Ala Asp Met His Pro Ile Phe Leu Ala His Gly Pro Ala Phe Arg 355 Lys Asn Phe Ser Lys Glu Ala Met Asn Ser Thr Asp Leu Tyr Pro 375 370 365 Leu Leu Cys His Leu Leu Asn Ile Thr Ala Met Pro His Asn Gly 390 385 Ser Phe Trp Asn Val Gln Asp Leu Leu Asn Ser Ala Met Pro Arg 395 Val Val Pro Tyr Thr Gln Ser Thr Ile Leu Leu Pro Gly Ser Val 415 Lys Pro Ala Glu Tyr Asp Gln Glu Gly Ser Tyr Pro Tyr Phe Ile 430 Gly Val Ser Leu Gly Ser Ile Ile Val Ile Val Phe Phe Val Ile 440 Phe Ile Lys His Leu Ile His Ser Gln Ile Pro Ala Leu Gln Asp 455 460 Met His Ala Glu Ile Ala Gln Pro Leu Leu Gln Ala

<210> 286 <211> 1337 <212> DNA

<213> Homo sapiens

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<210> 287

<211> 255 <212> PRT

<213> Homo sapiens

<400> 287

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Ala Pro Ala Glu Arg Met Ser Lys Phe Leu Arg His Phe Thr Val

Val Gly Asp Asp Tyr His Ala Trp Asn Ile Asn Tyr Lys Lys Trp 35

Glu Asn Glu Glu Glu Glu Glu Glu Glu Gln Pro Pro Pro Thr

Pro Val Ser Gly Glu Glu Gly Arg Ala Ala Ala Pro Asp Val Ala 75

Pro Ala Pro Gly Pro Ala Pro Arg Ala Pro Leu Asp Phe Arg Gly

Met Leu Arg Lys Leu Phe Ser Ser His Arg Phe Gln Val Ile Ile

Ile Cys Leu Val Val Leu Asp Ala Leu Leu Val Leu Ala Glu Leu 120 115

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Ile Leu Asp Leu Lys Ile Ile Gln Pro Asp Lys Asn Asn Tyr Ala
                125
Ala Met Val Phe His Tyr Met Ser Ile Thr Ile Leu Val Phe Phe
Met Met Glu Ile Ile Phe Lys Leu Phe Val Phe Arg Leu Ser Ser
                                                         165
                155
                                    160
Phe Thr Thr Ser Leu Arg Ser Trp Met Pro Val Val Val Val
                170
Ser Phe Ile Leu Asp Ile Val Leu Leu Phe Gln Glu His Gln Phe
                185
Glu Ala Leu Gly Leu Leu Ile Leu Leu Arg Leu Trp Arg Val Ala
                                                         210
Arg Ile Ile Asn Gly Ile Ile Ile Ser Val Lys Thr Arg Ser Glu
                                    220
                215
Arg Gln Leu Leu Arg Leu Lys Gln Met Asn Val Gln Leu Ala Ala
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Lys Ile Gln His Leu Glu Phe Ser Cys Ser Glu Lys Pro Leu Asp
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<210> 288

<211> 3334

<212> DNA

<213> Homo sapiens

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<210> 289

<211> 469

<212> PRT

<213> Homo sapiens

<400> 289

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Thr Glu Phe Gln Tyr Phe Glu Ser Lys Gly Leu Pro Ala Glu Leu 20 25 30

Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe 35 40 45

Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp
50 55 60

Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr 65 70 75

Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu 80 85 90

Asp Lys Lys Asn Asp Gly Arg Ile Asp Ala Gln Glu Ile Met Gln Ser Leu Arg Asp Leu Gly Val Lys Ile Ser Glu Gln Gln Ala Glu Lys Ile Leu Lys Ser Met Asp Lys Asn Gly Thr Met Thr Ile Asp 135 130 Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val Glu Asn 145 Ile Pro Glu Ile Ile Leu Tyr Trp Lys His Ser Thr Ile Phe Asp 165 160 Val Gly Glu Asn Leu Thr Val Pro Asp Glu Phe Thr Val Glu Glu 170 Arg Gln Thr Gly Met Trp Trp Arg His Leu Val Ala Gly Gly Gly 190 185 Ala Gly Ala Val Ser Arg Thr Cys Thr Ala Pro Leu Asp Arg Leu Lys Val Leu Met Gln Val His Ala Ser Arg Ser Asn Asn Met Gly Ile Val Gly Gly Phe Thr Gln Met Ile Arg Glu Gly Gly Ala Arg 230 Ser Leu Trp Arg Gly Asn Gly Ile Asn Val Leu Lys Ile Ala Pro Glu Ser Ala Ile Lys Phe Met Ala Tyr Glu Gln Ile Lys Arg Leu 260 Val Gly Ser Asp Gln Glu Thr Leu Arg Ile His Glu Arg Leu Val 280 Ala Gly Ser Leu Ala Gly Ala Ile Ala Gln Ser Ser Ile Tyr Pro Met Glu Val Leu Lys Thr Arg Met Ala Leu Arg Lys Thr Gly Gln 315 Tyr Ser Gly Met Leu Asp Cys Ala Arg Arg Ile Leu Ala Arg Glu 320 Gly Val Ala Ala Phe Tyr Lys Gly Tyr Val Pro Asn Met Leu Gly 345 340 Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu Thr Leu Lys Asn Ala Trp Leu Gln His Tyr Ala Val Asn Ser Ala Asp Pro 375 370 365 Gly Val Phe Val Leu Leu Ala Cys Gly Thr Met Ser Ser Thr Cys 385 Gly Gln Leu Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met 395 400

Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser 420

Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu 435

Tyr Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val 450

Ser Ile Ser Tyr Val 455

Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly 465

Val Gln Ser Arg

<210> 290 <211> 1658 <212> DNA <213> Homo sapiens

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<211> 282

<212> PRT

<213> Homo sapiens

<400> 291

Met Ala Ser Leu Gly Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile 1 5 10 15

Ile Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Ile Ser Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala 35 40 45

Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro  $50 \ \ 55 \ \ \ 60$ 

Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly
65 70 75

Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu 80 85 90

Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr Ala Val Phe Ala 95 100 105

Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val 110 115 120

Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser 125 130 135

Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe  $140 \,$ 

Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr

	155	160		165			
Leu Arg Cys Glu	Ala Pro Arg 170	Trp Phe Pro		Val Val 180			
Trp Ala Ser Gln	Val Asp Gln 185	Gly Ala Asn 190	Phe Ser Glu	Val Ser 195			
Asn Thr Ser Phe	Glu Leu Asn 200	Ser Glu Asn 205		Lys Val 210			
Val Ser Val Leu	Tyr Asn Val 215	Thr Ile Asn 220		Ser Cys 225			
Met Ile Glu Asn	Asp Ile Ala 230	Lys Ala Thr 235	Gly Asp Ile	Lys Val 240			
Thr Glu Ser Glu	Ile Lys Arg 245	Arg Ser His 250	Leu Gln Leu	Leu Asn 255			
Ser Lys Ala Ser	Leu Cys Val	Ser Ser Phe 265	Phe Ala Ile	Ser Trp 270			
Ala Leu Leu Pro	Leu Ser Pro 275	Tyr Leu Met 280	Leu Lys				
<210> 292							

<210> 292 <211> 1484

<212> DNA

<213> Homo sapiens

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<210> 293

<211> 180

<212> PRT

<213> Homo sapiens

<400> 293

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Ala Leu Trp Gly Gly Thr Gln Pro Leu Leu Lys Arg Ala Ser Ala 20 25 30

Gly Leu Gln Arg Val His Glu Pro Thr Trp Ala Gln Gln Leu Leu 35 40 45

Gln Glu Met Lys Thr Leu Phe Leu Asn Thr Glu Tyr Leu Met Pro 50 55 60

Phe Leu Leu Asn Gln Cys Gly Ser Leu Leu Tyr Tyr Leu Thr Leu 65 70 75

Ala Ser Thr Asp Leu Thr Leu Ala Val Pro Ile Cys Asn Ser Leu 80 85 90

Ala Ile Ile Phe Thr Leu Ile Val Gly Lys Ala Leu Gly Glu Asp 95 100 105

Ile Gly Gly Lys Arg Lys Leu Asp Tyr Cys Glu Cys Gly Thr Gln
110 115 120

Leu Cys Gly Ser Arg His Thr Cys Val Ser Ser Phe Pro Glu Pro 125 130 135

Ile Ser Pro Glu Trp Val Arg Thr Arg Pro Phe Pro Ile Leu Pro 140  $\phantom{000}$  145  $\phantom{000}$  150

Phe Pro Leu Gln Leu Phe Cys Phe Leu Val Ala Ile Arg Val Pro 155 160 165

Phe Pro Trp Thr Val Trp Arg Lys Thr Glu Ala Gly Val Trp Asp 170 175 180

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<sup>&</sup>lt;210> 294

<sup>&</sup>lt;211> 1164

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;210> 295

<sup>&</sup>lt;211> 237

<sup>&</sup>lt;212> PRT

<213> Homo sapiens

<400> 295 Met Lys Gly Ile Leu Val Ala Gly Ile Thr Ala Val Leu Val Ala Ala Val Glu Ser Leu Ser Cys Val Gln Cys Asn Ser Trp Glu Lys Ser Cys Val Asn Ser Ile Ala Ser Glu Cys Pro Ser His Ala Asn Thr Ser Cys Ile Ser Ser Ser Ala Ser Ser Ser Leu Glu Thr Pro Val Arg Leu Tyr Gln Asn Met Phe Cys Ser Ala Glu Asn Cys Ser Glu Glu Thr His Ile Thr Ala Phe Thr Val His Val Ser Ala Glu Glu His Phe His Phe Val Ser Gln Cys Cys Gln Gly Lys Glu Cys 95 Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn Val Ser Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr Ser 130 135 Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu 165 160 Val Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe 180 Leu Ser Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys 185 Phe Glu Cys Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro Thr Thr Ser His Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu Ala Leu Ala Ser Leu Leu Leu Arg Gly Leu Leu Pro

<210> 296

<211> 1245

<212> DNA

<213> Homo sapiens

<400> 296

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ccagecccat ggteecegee geeggegege tgetgtgggt cetgetgetg 150

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gaggacgaga atgatgccat ggccgacgcc gaccgcctgg ctggaccagc 350
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gacacaagtc tetgtactga caccaactgt geeteteaga geaceaceag 950
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agagatgcaa ccaatagaca gaaaccagag gtaatggcca cttcatccac 1150
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<210> 297

<211> 341

<212> PRT

<213> Homo sapiens

<400> 297

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Leu Gly Pro Arg Ala Ala Gly Ala Gln Gly Leu Thr Gln Thr Pro
20 25 30

Thr Glu Met Gln Arg Val Ser Leu Arg Phe Gly Gly Pro Met Thr 35 40 45

Arg Ser Tyr Arg Ser Thr Ala Arg Thr Gly Leu Pro Arg Lys Thr
50 55 60

Arg Ile Ile Leu Glu Asp Glu Asn Asp Ala Met Ala Asp Ala Asp

75 70 65 Arg Leu Ala Gly Pro Ala Ala Ala Glu Leu Leu Ala Ala Thr Val 8.5 Ser Thr Gly Phe Ser Arg Ser Ser Ala Ile Asn Glu Glu Asp Gly Ser Ser Glu Glu Gly Val Val Ile Asn Ala Gly Lys Asp Ser Thr 110 115 Ser Arg Glu Leu Pro Ser Ala Thr Pro Asn Thr Ala Gly Ser Ser Ser Thr Arg Phe Ile Ala Asn Ser Gln Glu Pro Glu Ile Arg Leu 140 145 Thr Ser Ser Leu Pro Arg Ser Pro Gly Arg Ser Thr Glu Asp Leu 155 Pro Gly Ser Gln Ala Thr Leu Ser Gln Trp Ser Thr Pro Gly Ser 170 175 Thr Pro Ser Arg Trp Pro Ser Pro Ser Pro Thr Ala Met Pro Ser Pro Glu Asp Leu Arg Leu Val Leu Met Pro Trp Gly Pro Trp His Cys His Cys Lys Ser Gly Thr Met Ser Arg Ser Arg Ser Gly Lys 220 215 Leu His Gly Leu Ser Gly Arg Leu Arg Val Gly Ala Leu Ser Gln 235 Leu Arg Thr Glu His Lys Pro Cys Thr Tyr Gln Gln Cys Pro Cys Asn Arg Leu Arg Glu Glu Cys Pro Leu Asp Thr Ser Leu Cys Thr 260 Asp Thr Asn Cys Ala Ser Gln Ser Thr Thr Ser Thr Arg Thr Thr Thr Thr Pro Phe Pro Thr Ile His Leu Arg Ser Ser Pro Ser Leu 290 295 Pro Pro Ala Ser Pro Cys Pro Ala Leu Ala Phe Trp Lys Arg Val 305 Arg Ile Gly Leu Glu Asp Ile Trp Asn Ser Leu Ser Ser Val Phe 325 320 Thr Glu Met Gln Pro Ile Asp Arg Asn Gln Arg 335 <210> 298 <211> 2692 <212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 298

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cggttggtcc tgctagctgg ggcagcggcg ctggcgagcg gctcccaggg 100 cqaccgtgag ccggtgtacc gcgactgcgt actgcagtgc gaagagcaga 150 actgctctgg gggcgctctg aatcacttcc gctcccgcca gccaatctac 200 atgagtctag caggctggac ctgtcgggac gactgtaagt atgagtgtat 250 gtgggtcacc gttgggctct acctccagga aggtcacaaa gtgcctcagt 300 tccatggcaa gtggcccttc tcccggttcc tgttctttca agagccggca 350 teggeegtgg cetegtttet caatggeetg geeageetgg tgatgetetg 400 ccgctaccgc accttcgtgc cagcctcctc ccccatgtac cacacctgtg 450 tggccttcgc ctgggtgtcc ctcaatgcat ggttctggtc cacagtcttc 500 cacaccaggg acactgacct cacagagaaa atggactact tctgtgcctc 550 cactgtcatc ctacactcaa tctacctgtg ctgcgtcagg accgtggggc 600 tgcagcaccc agctgtggtc agtgccttcc gggctctcct gctgctcatg 650 ctgaccgtgc acgtctccta cctgagcctc atccgcttcg actatggcta 700 caacctggtg gccaacgtgg ctattggcct ggtcaacgtg gtgtggtggc 750 tggcctggtg cctgtggaac cagcggcggc tgcctcacgt gcgcaagtgc 800 gtggtggtgg tcttgctgct gcaggggctg tccctgctcg agctgcttga 850 cttcccaccq ctcttctggg tcctggatgc ccatgccatc tggcacatca 900 gcaccatccc tgtccacgtc ctcttttca gctttctgga agatgacagc 950 ctgtacctgc tgaaggaatc agaggacaag ttcaagctgg actgaagacc 1000 ttqqaqcqaq tctgccccaq tggggatcct gccccgccc tgctggcctc 1050 cettetece teaaceettg agatgattt etettteaa ettettgaac 1100 ttggacatga aggatgtggg cccagaatca tgtggccagc ccacccctg 1150 ttggccctca ccagccttgg agtctgttct agggaaggcc tcccagcatc 1200 tgggactcga gagtgggcag cccctctacc tcctggagct gaactggggt 1250 ggaactgagt gtgttcttag ctctaccggg aggacagctg cctgtttcct 1300 ccccaccage etectececa catecccage tgeetggetg ggteetgaag 1350 ccctctgtct acctgggaga ccagggacca caggccttag ggatacaggg 1400 ggtccccttc tgttaccacc ccccaccctc ctccaggaca ccactaggtg 1450 gtgctggatg cttgttcttt ggccagccaa ggttcacggc gattctcccc 1500 atgggatctt gagggaccaa gctgctggga ttgggaagga gtttcaccct 1550 gaccgttgcc ctagccaggt tcccaggagg cctcaccata ctccctttca 1600 gggccagggc tccagcaagc ccagggcaag gatcctgtgc tgctgtctgg 1650

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<210> 299

<211> 320

<212> PRT

<213> Homo sapiens

<400> 299

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Ala Leu Ala Ser Gly Ser Gln Gly Asp Arg Glu Pro Val Tyr Arg 20 25 30

Asp Cys Val Leu Gln Cys Glu Glu Gln Asn Cys Ser Gly Gly Ala 35 40 45

Leu Asn His Phe Arg Ser Arg Gln Pro Ile Tyr Met Ser Leu Ala 50 55 60

Gly Trp Thr Cys Arg Asp Asp Cys Lys Tyr Glu Cys Met Trp Val 65 70 75

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Thr Val Gly Leu Tyr Leu Gln Glu Gly His Lys Val Pro Gln Phe
His Gly Lys Trp Pro Phe Ser Arg Phe Leu Phe Phe Gln Glu Pro
                                    100
Ala Ser Ala Val Ala Ser Phe Leu Asn Gly Leu Ala Ser Leu Val
                                                         120
                                    115
Met Leu Cys Arg Tyr Arg Thr Phe Val Pro Ala Ser Ser Pro Met
                125
                                    130
Tyr His Thr Cys Val Ala Phe Ala Trp Val Ser Leu Asn Ala Trp
                                                         150
Phe Trp Ser Thr Val Phe His Thr Arg Asp Thr Asp Leu Thr Glu
Lys Met Asp Tyr Phe Cys Ala Ser Thr Val Ile Leu His Ser Ile
                                                         180
                170
Tyr Leu Cys Cys Val Arg Thr Val Gly Leu Gln His Pro Ala Val
                                    190
                185
Val Ser Ala Phe Arg Ala Leu Leu Leu Met Leu Thr Val His
                200
Val Ser Tyr Leu Ser Leu Ile Arg Phe Asp Tyr Gly Tyr Asn Leu
                                                         225
                                     220
Val Ala Asn Val Ala Ile Gly Leu Val Asn Val Val Trp Trp Leu
Ala Trp Cys Leu Trp Asn Gln Arg Arg Leu Pro His Val Arg Lys
                                     250
                245
Cys Val Val Val Leu Leu Leu Gln Gly Leu Ser Leu Leu Glu
                                     265
Leu Leu Asp Phe Pro Pro Leu Phe Trp Val Leu Asp Ala His Ala
                275
Ile Trp His Ile Ser Thr Ile Pro Val His Val Leu Phe Phe Ser
                                                         300
Phe Leu Glu Asp Asp Ser Leu Tyr Leu Leu Lys Glu Ser Glu Asp
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                305
                                     310
Lys Phe Lys Leu Asp
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<210> 300

<211> 1674

<212> DNA

<213> Homo sapiens

320

<400> 300
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cctcagtcat cagaacctga aggagtttgc cctgaccaac ccagagaaga 200 gcagcaccaa agaaacggag agaaaagaaa ccaaagccga ggaggagctg 250 gatgccgaag tcctggaggt gttccacccg acgcatgagt ggcaggccct 300 tcagccaggg caggctgtcc ctgcaggatc ccacgtacgg ctgaatcttc 350 agactgggga aagagggca aaactccaat atgaggacaa gttccgaaat 400 aatttgaaag gcaaaaggct ggatatcaac accaacacct acacatctca 450 ggatctcaag agtgcactgg caaaattcaa ggagggggca gagatggaga 500 gttcaaagga agacaaggca aggcaggctg aggtaaagcg gctcttccgc 550 cccattgagg aactgaagaa agactttgat gagctgaatg ttgtcattga 600 gactgacatg cagatcatgg tacggctgat caacaagttc aatagttcca 650 gctccagttt ggaagagaag attgctgcgc tctttgatct tgaatattat 700 gtccatcaga tggacaatgc gcaggacctg ctttcctttg gtggtcttca 750 agtggtgatc aatgggctga acagcacaga gcccctcgtg aaggagtatg 800 ctgcgtttgt gctgggcgct gccttttcca gcaaccccaa ggtccaggtg 850 gaggccatcg aagggggagc cctgcagaag ctgctggtca tcctggccac 900 ggagcagccg ctcactgcaa agaagaaggt cctgtttgca ctgtgctccc 950 tgctgcgcca cttcccctat gcccagcggc agttcctgaa gctcgggggg 1000 ctgcaggtcc tgaggaccct ggtgcaggag aagggcacgg aggtgctcgc 1050 cgtgcgcgtg gtcacactgc tctacgacct ggtcacggag aagatgttcg 1100 ccgaggagga ggctgagctg acccaggaga tgtccccaga gaagctgcag 1150 cagtategee aggtacaeet eetgeeagge etgtgggaae agggetggtg 1200 cgagatcacg gcccacctcc tggcgctgcc cgagcatgat gcccgtgaga 1250 aggtgctgca gacactgggc gtcctcctga ccacctgccg ggaccgctac 1300 cgtcaggacc cccagctcgg caggacactg gccagcctgc aggctgagta 1350 ccaggtgctg gccagcctgg agctgcagga tggtgaggac gagggctact 1400 tccaggaget getgggetet gtcaacaget tgetgaagga getgagatga 1450 ggccccacac caggactgga ctgggatgcc gctagtgagg ctgaggggtg 1500 ccagcgtggg tgggcttctc aggcaggagg acatcttggc agtgctggct 1550 aaaaaaaaa aaaaaaaaaa aaaa 1674

<210> 301

<211> 461 <212> PRT <213> Homo sapiens

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	290	295		300
Pro Tyr Ala Gln	Arg Gln Phe 305	Leu Lys Leu 310	Gly Gly Leu	Gln Val 315
Leu Arg Thr Leu	Val Gln Glu 320	Lys Gly Thr 325	Glu Val Leu	Ala Val 330
Arg Val Val Thr	Leu Leu Tyr 335	Asp Leu Val 340	Thr Glu Lys	Met Phe 345
Ala Glu Glu Glu	Ala Glu Leu 350	Thr Gln Glu 355	Met Ser Pro	Glu Lys 360
Leu Gln Gln Tyr	Arg Gln Val 365	His Leu Leu 370	Pro Gly Leu	Trp Glu 375
Gln Gly Trp Cys	Glu Ile Thr 380	Ala His Leu 385	Leu Ala Leu	Pro Glu 390
His Asp Ala Arg	Glu Lys Val 395	Leu Gln Thr 400	Leu Gly Val	Leu Leu 405
Thr Thr Cys Arg	Asp Arg Tyr 410	Arg Gln Asp 415	Pro Gln Leu	Gly Arg 420
Thr Leu Ala Ser	Leu Gln Ala 425	Glu Tyr Gln 430	Val Leu Ala	Ser Leu 435
Glu Leu Gln Asp	Gly Glu Asp 440	Glu Gly Tyr 445	Phe Gln Glu	Leu Leu 450
Gly Ser Val Asr	n Ser Leu Leu 455	Lys Glu Leu 460	Arg	

<210> 302

<211> 2136

<212> DNA

<213> Homo sapiens

<400> 302
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tcccatttgc ctgtcctggt caggcccca cccccttcc cacctgacca 200

gccatggggg ctgcggtgtt tttcggctgc actttcgtcg cgttcggccc 250

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<220>

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<211> 247
<212> PRT
<213> Homo sapiens
<400> 303
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 Pro Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu
 Arg Val Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser
 Leu Leu Leu Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr
 Asp Arg Ser Asp Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly
 Ala Ala Val Ser Val Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr
 Tyr Lys Leu Leu Lys Lys Ala Asp Glu Gly Leu Ala Ser Leu Ser
 Glu Asp Gly Arg Ser Pro Ile Ser Ile Arg Gln Met Ala Tyr Val
                                      115
 Ser Gly Leu Ser Phe Gly Ile Ile Ser Gly Val Phe Ser Val Ile
                  125
 Asn Ile Leu Ala Asp Ala Leu Gly Pro Gly Val Val Gly Ile His
                                                          150
 Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser Ala Phe Leu Thr Ala
                                      160
 Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val Val Phe Phe Asp
                  170
 Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu Val Val Gly
                                      190
 Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro Trp Tyr
 Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met Gly
                                      220
 Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
                                      235
                  230
 Arg Ser Leu Leu Cys Lys Asp
                  245
 <210> 304
 <211> 240
 <212> DNA
 <213> Homo sapiens
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<221> unsure
<222> 108, 123, 126, 154, 198, 206, 217
<223> unknown base
<400> 304
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<211> 461

<212> PRT

<213> Homo sapiens

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50 55 60

Gly Thr Ala Pro Pro Pro Val Val Ser Thr Gly Ala Ala Ser Ala 65 70 75

Asn Ser Ala Leu Val Thr Val Glu Arg Ala Asp Ser Ser His Leu 80 85 90

Ser Ile Leu Ile Asp Pro Arg Cys Pro Asp Leu Thr Asp Ser Phe 95 100 105 Ala Arg Leu Glu Ser Ala Gln Ala Ser Val Leu Gln Ala Leu Thr Glu His Gln Ala Gln Pro Arg Leu Val Gly Asp Gln Glu Gln Glu 130 Leu Leu Asp Thr Leu Ala Asp Gln Leu Pro Arg Leu Leu Ala Arg 145 Ala Ser Glu Leu Gln Thr Glu Cys Met Gly Leu Arg Lys Gly His 155 Gly Thr Leu Gly Gln Gly Leu Ser Ala Leu Gln Ser Glu Gln Gly 180 175 170 Arg Leu Ile Gln Leu Leu Ser Glu Ser Gln Gly His Met Ala His 195 185 Leu Val Asn Ser Val Ser Asp Ile Leu Asp Ala Leu Gln Arg Asp 205 200 Arg Gly Leu Gly Arg Pro Arg Asn Lys Ala Asp Leu Gln Arg Ala Pro Ala Arg Gly Thr Arg Pro Arg Gly Cys Ala Thr Gly Ser Arg Pro Arg Asp Cys Leu Asp Val Leu Leu Ser Gly Gln Gln Asp Asp 250 Gly Val Tyr Ser Val Phe Pro Thr His Tyr Pro Ala Gly Phe Gln 260 Val Tyr Cys Asp Met Arg Thr Asp Gly Gly Gly Trp Thr Val Phe 285 275 Gln Arg Arg Glu Asp Gly Ser Val Asn Phe Phe Arg Gly Trp Asp 295 Ala Tyr Arg Asp Gly Phe Gly Arg Leu Thr Gly Glu His Trp Leu 305 Gly Leu Lys Arg Ile His Ala Leu Thr Thr Gln Ala Ala Tyr Glu 330 Leu His Val Asp Leu Glu Asp Phe Glu Asn Gly Thr Ala Tyr Ala 340 Arg Tyr Gly Ser Phe Gly Val Gly Leu Phe Ser Val Asp Pro Glu 355 Glu Asp Gly Tyr Pro Leu Thr Val Ala Asp Tyr Ser Gly Thr Ala 370 Gly Asp Ser Leu Leu Lys His Ser Gly Met Arg Phe Thr Thr Lys 385 Asp Arg Asp Ser Asp His Ser Glu Asn Asn Cys Ala Ala Phe Tyr Arg Gly Ala Trp Trp Tyr Arg Asn Cys His Thr Ser Asn Leu Asn 415

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<sup>&</sup>lt;210> 319

<sup>&</sup>lt;211> 280

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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<sup>&</sup>lt;210> 320

<sup>&</sup>lt;211> 468

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

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<210> 325
<211> 2988
<212> DNA
<213> Homo sapiens

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- <212> PRT
- <213> Homo sapiens

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- Val Ala Val Gly Ile Ser Leu Gly Phe Thr Leu Ser Leu Leu Ser 20 25 30
- Val Thr Trp Val Glu Glu Pro Cys Gly Pro Gly Pro Pro Gln Pro 35 40 45
- Gly Asp Ser Glu Leu Pro Pro Arg Gly Asn Thr Asn Ala Arg 50 55 60
- Arg Pro Asn Ser Val Gln Pro Gly Ala Glu Arg Glu Lys Pro Gly 65 70 75
- Ala Gly Glu Gly Ala Gly Glu Asn Trp Glu Pro Arg Val Leu Pro 80 85 90
- Tyr His Pro Ala Gln Pro Gly Gln Ala Ala Lys Lys Ala Val Arg 95 100
- Thr Arg Tyr Ile Ser Thr Glu Leu Gly Ile Arg Gln Arg Leu Leu 110 115 120
- Val Ala Val Leu Thr Ser Gln Thr Thr Leu Pro Thr Leu Gly Val 125 130 135
- Ala Val Asn Arg Thr Leu Gly His Arg Leu Glu Arg Val Val Phe 140 145 150
- Leu Thr Gly Ala Arg Gly Arg Arg Ala Pro Pro Gly Met Ala Val 155 160 165
- Val Thr Leu Gly Glu Glu Arg Pro Ile Gly His Leu His Leu Ala 170 175 180
- Leu Arg His Leu Leu Glu Gln His Gly Asp Asp Phe Asp Trp Phe 185 190 195
- Phe Leu Val Pro Asp Thr Thr Tyr Thr Glu Ala His Gly Leu Ala 200 205 210
- Arg Leu Thr Gly His Leu Ser Leu Ala Ser Ala Ala His Leu Tyr 215 220 225
- Leu Gly Arg Pro Gln Asp Phe Ile Gly Gly Glu Pro Thr Pro Gly 230 235
- Arg Tyr Cys His Gly Gly Phe Gly Val Leu Leu Ser Arg Met Leu
  245 250 250
- Leu Gln Gln Leu Arg Pro His Leu Glu Gly Cys Arg Asn Asp Ile 260 265 270

Val Ser Ala Arg Pro Asp Glu Trp Leu Gly Arg Cys Ile Leu Asp 285 Ala Thr Gly Val Gly Cys Thr Gly Asp His Glu Gly Val His Tyr Ser His Leu Glu Leu Ser Pro Gly Glu Pro Val Gln Glu Gly Asp 315 Pro His Phe Arg Ser Ala Leu Thr Ala His Pro Val Arg Asp Pro 320 Val His Met Tyr Gln Leu His Lys Ala Phe Ala Arg Ala Glu Leu 345 335 Glu Arg Thr Tyr Gln Glu Ile Gln Glu Leu Gln Trp Glu Ile Gln 350 Asn Thr Ser His Leu Ala Val Asp Gly Asp Arg Ala Ala Ara Trp 375 370 365 Pro Val Gly Ile Pro Ala Pro Ser Arg Pro Ala Ser Arg Phe Glu 385 380 Val Leu Arg Trp Asp Tyr Phe Thr Glu Gln His Ala Phe Ser Cys Ala Asp Gly Ser Pro Arg Cys Pro Leu Arg Gly Ala Asp Arg Ala 420 Asp Val Ala Asp Val Leu Gly Thr Ala Leu Glu Glu Leu Asn Arg Arg Tyr His Pro Ala Leu Arg Leu Gln Lys Gln Gln Leu Val Asn 450 Gly Tyr Arg Arg Phe Asp Pro Ala Arg Gly Met Glu Tyr Thr Leu 455 Asp Leu Gln Leu Glu Ala Leu Thr Pro Gln Gly Gly Arg Arg Pro 470 Leu Thr Arg Arg Val Gln Leu Leu Arg Pro Leu Ser Arg Val Glu Ile Leu Pro Val Pro Tyr Val Thr Glu Ala Ser Arg Leu Thr Val 510 505 Leu Leu Pro Leu Ala Ala Ala Glu Arg Asp Leu Ala Pro Gly Phe 515 Leu Glu Ala Phe Ala Thr Ala Ala Leu Glu Pro Gly Asp Ala Ala 530 535 Ala Ala Leu Thr Leu Leu Leu Leu Tyr Glu Pro Arg Gln Ala Gln 555 550 545 Arg Val Ala His Ala Asp Val Phe Ala Pro Val Lys Ala His Val 560 Ala Glu Leu Glu Arg Arg Phe Pro Gly Ala Arg Val Pro Trp Leu 585 580 575

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Ser Val Gln Thr Ala Ala Pro Ser Pro Leu Arg Leu Met Asp Leu
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Leu Ser Lys Lys His Pro Leu Asp Thr Leu Phe Leu Leu Ala Gly
Pro Asp Thr Val Leu Thr Pro Asp Phe Leu Asn Arg Cys Arg Met
                                                          630
                 620
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Ala Phe His Pro Gly Val Ala Pro Pro Gln Gly Pro Gly Pro Pro
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Glu Leu Gly Arg Asp Thr Gly Arg Phe Asp Arg Gln Ala Ala Ser
Glu Ala Cys Phe Tyr Asn Ser Asp Tyr Val Ala Ala Arg Gly Arg
Leu Ala Ala Ser Glu Gln Glu Glu Glu Leu Leu Glu Ser Leu
Asp Val Tyr Glu Leu Phe Leu His Phe Ser Ser Leu His Val Leu
Arg Ala Val Glu Pro Ala Leu Leu Gln Arg Tyr Arg Ala Gln Thr
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                                     730
Cys Ser Ala Arg Leu Ser Glu Asp Leu Tyr His Arg Cys Leu Gln
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 gctttttaga agcttgattt cctttgaaga tgaaagacta gcggaagctc 200
 tgcctctttc cccagtgggc gagggaactc ggggcgattg gctgggaact 250
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Ser Ser Phe Ser Arg Thr Val Val Ala Pro Ser Ala Val Ala Gly 35 40 45

Lys Arg Pro Pro Glu Pro Thr Thr Pro Trp Gln Glu Asp Pro Glu
50 55 60

Pro Glu Asp Glu Asn Leu Tyr Glu Lys Asn Pro Asp Ser His Gly 65 70 75

Tyr Asp Lys Asp Pro Val Leu Asp Val Trp Asn Met Arg Leu Val 80 85 90

Phe Phe Phe Gly Val Ser Ile Ile Leu Val Leu Gly Ser Thr Phe 95 100 105

Val Ala Tyr Leu Pro Asp Tyr Arg Met Lys Glu Trp Ser Arg Arg 110 115 120

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Ile Met Glu Ser Asn Cys Phe Asp Pro Ser Lys Ile Gln Leu Pro 140 145 150 Glu Asp Glu

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 gaccacaccg tggcaagagg acccagaacc cgaggacgaa aacttgtatg 200
 agaagaaccc agactcccat ggttatgaca aggaccccgt tttggacgtc 250
 tggaacatgc gacttgtctt cttctttggc gtctccatca tcctggtcct 300
 tggcagcacc tttgtggcct atctgcctga ctacaggatg aaagagtggt 350
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## <213> Homo sapiens

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acgcgctggg	attcggagct	tcagcgggaa	ggagtgtccc	attacaggct	200
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<212> PRT

<213> Homo sapiens

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Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln 35 40 45

Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser 50 . 55 60

His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys
65 70 75

Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp 80 85 90

Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly 95 100 105

Ala Glu Leu Trp Val Trp Phe Gln Asp Thr Val Thr Asp Val Asp 110 115

Lys Ser Trp Lys Glu Leu Ser Asn Val Leu Ser Gly Ile Phe Cys 125 130 135

Ala Ser Leu Asn Phe Ile Asp Ser Thr Asn Thr Val Thr Pro Thr 140 145 150

Ala	Ser	Phe	Lys	Pro 155	Leu	Gly	Leu	Ala	Asn 160	Asp	Thr	Asp	His	Tyr 165
Phe	Leu	Arg	Tyr	Ala 170	Val	Leu	Pro	Arg	Glu 175	Val	Val	Cys	Thr	Glu 180
Asn	Leu	Thr	Pro	Trp 185	Lys	Lys	Leu	Leu	Pro 190	Суз	Ser	Ser	Lys	Ala 195
Gly	Leu	Ser	Val	Leu 200	Leu	Lys	Ala	Asp	Arg 205	Leu	Phe	His	Thr	Ser 210
Tyr	His	Ser	Gln	Ala 215	Val	His	Ile	Arg	Pro 220	Val	Суз	Arg	Asn	Ala 225
Arg	Суз	Thr	Ser	Ile 230	Ser	Trp	Glu	Leu	Arg 235	Gln	Thr	Leu	Ser	Val 240
Val	Phe	Asp	Ala	Phe 245	Ile	Thr	Gly	Gln	Gly 250	Lys	Lys	Asp	Trp	Ser 255
Leu	Phe	Arg	Met	Phe 260	Ser	Arg	Thr	Leu	Thr 265	Glu	Pro	Cys	Pro	Leu 270
Ala	Ser	Glu	Ser	Arg 275	Val	Tyr	Val	Asp	Ile 280	Thr	Thr	Tyr	Asn	Gln 285
Asp	Asn	Glu	Thr	Leu 290	Glu	Val	His	Pro	Pro 295	Pro	Thr	Thr	Thr	Tyr 300
Gln	Asp	Val	Ile	Leu 305	Gly	Thr	Arg	Lys	Thr 310	Tyr	Ala	Ile	Tyr	Asp 315
Leu	Leu	Asp	Thr	Ala 320	Met	Ile	Asn	Asn	Ser 325	Arg	Asn	Leu	Asn	Ile 330
Gln	Leu	Lys	Trp	Lys 335	Arg	Pro	Pro	Glu	Asn 340	Glu	Ala	Pro	Pro	Val 345
Pro	Phe	Leu	His	Ala 350	Gln	Arg	Tyr	Val	Ser 355	Gly	Tyr	Gly	Leu	Gln 360
Lys	Gly	Glu	Leu	Ser 365	Thr	Leu	Leu	Tyr	Asn 370	Thr	His	Pro	Tyr	Arg 375
Ala	Phe	Pro	Val	Leu 380	Leu	Leu	Asp	Thr	Val 385	Pro	Trp	Tyr	Leu	Arg 390
Leu	Tyr	Val	His	Thr 395	Leu	Thr	Ile	Thr	Ser 400	Lys	Gly	Lys	Glu	Asn 405
Lys	Pro	Ser	Tyr	Ile 410	His	Tyr	Gln	Pro	Ala 415	Gln	Asp	Arg	Leu	Gln 420
Pro	His	Leu	Leu	Glu 425	Met	Leu	Ile	Gln	Leu 430	Pro	Ala	Asn	Ser	Val 435
Thr	Lys	Val	Ser	Ile 440	Gln	Phe	Glu	Arg	Ala 445	Leu	Leu	Lys	Trp	Thr 450
Glu	Tyr	Thr	Pro	Asp 455	Pro	Asn	His	Gly	Phe 460	Tyr	Val	Ser	Pro	Ser 465

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Asp Trp Glu Glu Ser Pro Leu Phe Asn Ser Leu Phe Pro Val Ser
Asp Gly Ser Asn Tyr Phe Val Arg Leu Tyr Thr Glu Pro Leu Leu
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                                      505
                 500
Val Asn Leu Pro Thr Pro Asp Phe Ser Met Pro Tyr Asn Val Ile
                                      520
                 515
Cys Leu Thr Cys Thr Val Val Ala Val Cys Tyr Gly Ser Phe Tyr
                                                          540
                                      535
                 530
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<210> 345

<211> 111

<212> PRT

<213> Homo sapiens

<400> 345

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Val Thr Leu Val Ala Val Glu Gly Val Lys Glu Gly Ile Glu Lys

Ala Gly Val Cys Pro Ala Asp Asn Val Arg Cys Phe Lys Ser Asp

Pro Pro Gln Cys His Thr Asp Gln Asp Cys Leu Gly Glu Arg Lys

Cys Cys Tyr Leu His Cys Gly Phe Lys Cys Val Ile Pro Val Lys

Glu Leu Glu Glu Gly Gly Asn Lys Asp Glu Asp Val Ser Arg Pro

Tyr Pro Glu Pro Gly Trp Glu Ala Lys Cys Pro Gly Ser Ser Ser

Thr Arg Cys Pro Gln Lys 110

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<210> 347

<211> 600

<212> PRT

<213> Homo sapiens

<400> 347

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Gln Trp Ser Leu Leu Ala Val Leu Val Phe Phe Leu Phe Ala 20 25 30

Leu Pro Ser Phe Ile Lys Glu Pro Gln Thr Lys Pro Ser Arg His
35 40 45

Gln Arg Thr Glu Asn Ile Lys Glu Arg Ser Leu Gln Ser Leu Ala 50 55 60

Lys Pro Lys Ser Gln Ala Pro Thr Arg Ala Arg Arg Thr Thr Ile

				65					70					75
Tyr	Ala	Glu	Pro	Ala 80	Pro	Glu	Asn	Asn	Ala 85	Leu	Asn	Thr	Gln	Thr 90
Gln	Pro	Lys	Ala	His 95	Thr	Thr	Gly	Asp	Arg 100	Gly	Lys	Glu	Ala	Asn 105
Gln	Ala	Pro	Pro	Glu 110	Glu	Gln	qsA	Lys	Val 115	Pro	His	Thr	Ala	Gln 120
Arg	Ala	Ala	Trp	Lys 125	Ser	Pro	Glu	Lys	Glu 130	Lys	Thr	Met	Val	Asn 135
Thr	Leu	Ser	Pro	Arg 140	Gly	Gln	Asp	Ala	Gly 145	Met	Ala	Ser	Gly	Arg 150
Thr	Glu	Ala	Gln	Ser 155	Trp	Lys	Ser	Gln	Asp 160	Thr	Lys	Thr	Thr	Gln 165
Gly	Asn	Gly	Gly	Gln 170	Thr	Arg	Lys	Leu	Thr 175	Ala	Ser	Arg	Thr	Val 180
Ser	Glu	Lys	His	Gln 185	Gly	Lys	Ala	Ala	Thr 190	Thr	Ala	Lys	Thr	Leu 195
Ile	Pro	Lys	Ser	Gln 200	His	Arg	Met	Leu	Ala 205	Pro	Thr	Gly	Ala	Val 210
Ser	Thr	Arg	Thr	Arg 215	Gln	Lys	Gly	Val	Thr 220	Thr	Ala	Val	Ile	Pro 225
Pro	Lys	Glu	Lys	Lys 230	Pro	Gln	Ala	Thr	Pro 235	Pro	Pro	Ala	Pro	Phe 240
Gln	Ser	Pro	Thr	Thr 245		Arg	Asn	Gln	Arg 250	Leu	Lys	Ala	Ala	Asn 255
Phe	Lys	Ser	Glu	Pro 260		Trp	Asp	Phe	Glu 265	Glu	Lys	Tyr	Ser	Phe 270
Glu	Ile	Gly	Gly	Leu 275		Thr	Thr	Cys	Pro 280	Asp	Ser	Val	. Lys	Ile 285
Lys	Ala	Ser	Lys	Ser 290		Trp	Leu	Gln	Lys 295	Leu	Phe	Leu	Pro	Asn 300
Leu	Thr	Leu	Phe	Leu 305		Ser	: Arg	His	Phe 310	Asn	Gln	Ser	Glu	Trp 315
Asp	Arg	Leu	ı Glu	His 320		a Ala	Pro	Pro	9 Phe 325	e Gly	7 Phe	Met	: Glu	Leu 330
Asn	туг	Ser	Leu	Val 335		Lys	val	. Val	Thr 340	Arg	g Ph∈	e Pro	) Pro	Val 345
Pro	Glr	Glr	n Glr	1 Leu 350		ı Lev	ı Ala	. Ser	355	Pro	Ala	a Gly	y Ser	Leu 360
Arç	g Cys	s Ile	e Thr	Cys 365	s Ala	a Val	. Val	. Gly	7 Asr 370	ı Gly	y Gly	į Il∈	e Leu	Asn 375

Asn Ser His Met Gly Gln Glu Ile Asp Ser His Asp Tyr Val Phe

				380					385					390
Arg	Leu	Ser	Gly	Ala 395	Leu	Ile	Lys	Gly	Tyr 400	Glu	Gln	Asp	Val	Gly 405
Thr	Arg	Thr	Ser	Phe 410	Tyr	Gly	Phe	Thr	Ala 415	Phe	Ser	Leu	Thr	Gln 420
Ser	Leu	Leu	Ile	Leu 425	Gly	Asn	Arg	Gly	Phe 430	Lys	Asn	Val	Pro	Leu 435
Gly	Lys	Asp	Val	Arg 440	Tyr	Leu	His	Phe	Leu 445	Glu	Gly	Thr	Arg	Asp 450
Tyr	Glu	Trp	Leu	Glu 455	Ala	Leu	Leu	Met	Asn 460	Gln	Thr	Val	Met	Ser 465
Lys	Asn	Leu	Phe	Trp 470	Phe	Arg	His	Arg	Pro 475	Gln	Glu	Ala	Phe	Arg 480
Glu	Ala	Leu	His	Met 485	Asp	Arg	Tyr	Leu	Leu 490	Leu	His	Pro	Asp	Phe 495
Leu	Arg	Tyr	Met	Lys 500	Asn	Arg	Phe	Leu	Arg 505	Ser	Lys	Thr	Leu	Asp 510
Gly	Ala	His	Trp	Arg 515	Ile	Tyr	Arg	Pro	Thr 520	Thr	Gly	Ala	Leu	Leu 525
Leu	Leu	Thr	Ala	Leu 530	Gln	Leu	Cys	Asp	Gln 535	Val	Ser	Ala	Tyr	Gly 540
Phe	Ile	Thr	Glu	Gly 545	His	Glu	Arg	Phe	Ser 550	Asp	His	Tyr	Tyr	Asp 555
Thr	Ser	Trp	Lys	Arg 560	Leu	Ile	Phe	Tyr	Ile 565	Asn	His	Asp	Phe	Lys 570
Leu	Glu	Arg	Glu	Val 575	Trp	Lys	Arg	Leu	His 580	Asp	Glu	Gly	Ile	Ile 585
Arg	Leu	Tyr	Gln	Arg 590	Pro	Gly	Pro	Gly	Thr 595	Ala	Lys	Ala	Lys	Asn 600
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<sup>&</sup>lt;213> Homo sapiens

ctttatacac atcccctcat ggacaagaga tttattttg cagacagact 400 cttccataag tcctttgagt tttgtatgtt gttgacagtt tgcagatata 450 tattcgataa atcagtgtac ttgacagtgt tatctgtcac ttattt 496

<210> 349

<211> 91

<212> PRT

<213> Homo sapiens

<400> 349

Met Arg Gly Pro Gly His Pro Leu Leu Leu Gly Leu Leu Val 1 5 10 15

Leu Gly Pro Ser Pro Glu Gln Arg Val Glu Ile Val Pro Arg Asp 20 25 30

Leu Arg Met Lys Asp Lys Phe Leu Lys His Leu Thr Gly Pro Leu 35 40 45

Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
50 55 60

Asn Thr Arg Asp Cys Thr Ile Pro Ala Tyr Tyr Lys Arg Cys Ala 65 70 75

Arg Leu Leu Thr Arg Leu Ala Val Ser Pro Val Cys Met Glu Asp 80 85 90

Lys

<210> 350

<211> 1141

<212> DNA

<400> 350

<213> Homo sapiens

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ccacagectg getteatgta eccaectagt ggteetgete eccaatatee 600

actetacea getgggeece cagtetacaa ecetgeaget ecteeteet 650
atatgeeace acageeetet taceeggag eetgaggaac eageeatgte 700
tetgetgeec etteagtgat gecaacettg ggagatgeec teateetgta 750
cetgeatetg gteetggggg tggeaggagt eetecageea ecaggeecea 800
gaceaageea ageeetggge ectactgggg acagageece agggaagtgg 850
aacaggaget gaactagaac tatgagggt tggggggagg gettggaatt 900
atgggetatt tttactgggg geaagggagg gagatgacag eetgggteac 950
agtgeetgtt tteaaatagt eeetetgee ecaagateee ageeaggagg 1000
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<210> 351

<211> 197

<212> PRT

<213> Homo sapiens

<400> 351

Met Pro Pro Ala Gly Leu Arg Arg Ala Ala Pro Leu Thr Ala Ile 1 5 10 15

Cys Leu Trp Tyr Leu Asp Arg Asn Gly Ser Trp His Pro Gly Phe 35 40 45

Tyr Cys Cys Arg Asp Leu Thr Leu Leu Ile Thr Glu Arg Gln Gln
65 70 75

Lys His Cys Leu Ala Phe Ser Pro Lys Thr Ile Ala Gly Ile Ala  $80 \hspace{1cm} 85 \hspace{1cm} 90$ 

Ser Ala Val Ile Leu Phe Val Ala Val Val Ala Thr Thr Ile Cys 95 100 105

Cys Phe Leu Cys Ser Cys Cys Tyr Leu Tyr Arg Arg Arg Gln Gln 110 115 120

Leu Gln Ser Pro Phe Glu Gly Gln Glu Ile Pro Met Thr Gly Ile 125 130 135

Pro Val Gln Pro Val Tyr Pro Tyr Pro Gln Asp Pro Lys Ala Gly
140 145 150

Pro Ala Pro Pro Gln Pro Gly Phe Met Tyr Pro Pro Ser Gly Pro

Ala Pro Gln Tyr Pro Leu Tyr Pro Ala Gly Pro Pro Val Tyr Asn 170 175 Pro Ala Ala Pro Pro Pro Tyr Met Pro Pro Gln Pro Ser Tyr Pro 185 190 195

Gly Ala

<210> 352 <211> 3226 <212> DNA

<213> Homo sapiens

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<210> 353

<211> 941

<212> PRT

<213> Homo sapiens

<400> 353

Met Val Phe Leu Pro Leu Lys Trp Ser Leu Ala Thr Met Ser Phe  $1 \hspace{1.5cm} 5 \hspace{1.5cm} 10 \hspace{1.5cm} 15$ 

Leu Leu Ser Ser Leu Leu Ala Leu Leu Thr Val Ser Thr Pro Ser 20 25 30

Trp Cys Gln Ser Thr Glu Ala Ser Pro Lys Arg Ser Asp Gly Thr  $35 \ \ 40 \ \ 45$ 

Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro 50 55 60

Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr 65 70 75

Phe Trp Gly Thr Thr Lys Val Glu Ile Thr Ala Ser Gln Pro Thr 80 85 90

Ser Thr Ile Ile Leu His Ser His His Leu Gln Ile Ser Arg Ala 95 100 105

Thr Leu Arg Lys Gly Ala Gly Glu Arg Leu Ser Glu Glu Pro Leu 110 115 120

Gln Val Leu Glu His Pro Pro Gln Glu Gln Ile Ala Leu Leu Ala 125 130 135

Pro Glu Pro Leu Leu Val Gly Leu Pro Tyr Thr Val Val Ile His
140 145 150

Tyr Ala Gly Asn Leu Ser Glu Thr Phe His Gly Phe Tyr Lys Ser 155 160 165

Thr Tyr Arg Thr Lys Glu Gly Glu Leu Arg Ile Leu Ala Ser Thr 170 175 180

Gln Phe Glu Pro Thr Ala Ala Arg Met Ala Phe Pro Cys Phe Asp 185 190

Glu Pro Ala Phe Lys Ala Ser Phe Ser Ile Lys Ile Arg Arg Glu 200  $\cdot$  205 210

Pro Arg His Leu Ala Ile Ser Asn Met Pro Leu Val Lys Ser Val

				215					220					225
Thr	Val	Ala	Glu	Gly 230	Leu	Ile	Glu	Asp	His 235	Phe	Asp	Val	Thr	Val 240
Lys	Met	Ser	Thr	Tyr 245	Leu	Val	Ala	Phe	Ile 250	Ile	Ser	Asp	Phe	Glu 255
Ser	Val	Ser	Lys	Ile 260	Thr	Lys	Ser	Gly	Val 265	Lys	Val	Ser	Val	Tyr 270
Ala	Val	Pro	Asp	Lys 275	Ile	Asn	Gln	Ala	Asp 280	Tyr	Ala	Leu	Asp	Ala 285
Ala	Val	Thr	Leu	Leu 290	Glu	Phe	Tyr	Glu	Asp 295	Tyr	Phe	Ser	Ile	Pro 300
Tyr	Pro	Leu	Pro	Lys 305	Gln	Asp	Leu	Ala	Ala 310	Ile	Pro	Asp	Phe	Gln 315
Ser	Gly	Ala	Met	Glu 320	Asn	Trp	Gly	Leu	Thr 325	Thr	Tyr	Arg	Glu	Ser 330
Ala	Leu	Leu	Phe	Asp 335	Ala	Glu	Lys	Ser	Ser 340	Ala	Ser	Ser	Lys	Leu 345
Gly	Ile	Thr	Val	Thr 350	Val	Ala	His	Glu	Leu 355	Ala	His	Gln	Trp	Phe 360
Gly	Asn	Leu	Val	Thr 365	Met	Glu	Trp	Trp	Asn 370	Asp	Leu	Trp	Leu	Asn 375
Glu	Gly	Phe	Ala	380 Lys	Phe	Met	Glu	Phe	Val 385	Ser	Val	Ser	Val	Thr 390
His	Pro	Glu	Leu	Lys 395	Val	Gly	Asp	Tyr	Phe 400	Phe	Gly	Lys	Cys	Phe 405
Asp	Ala	Met	Glu	Val 410	Asp	Ala	Leu	Asn	Ser 415	Ser	His	Pro	Val	Ser 420
Thr	Pro	Val	Glu	Asn 425		Ala	Gln	Ile	Arg 430	Glu	Met	Phe	Asp	Asp 435
Val	Ser	Tyr	Asp	Lys 440		Ala	Cys	Ile	Leu 445	Asn	Met	Leu	Arg	Glu 450
Tyr	Leu	Ser	Ala	Asp 455		Phe	Lys	Ser	Gly 460	Ile	Val	Gln	Tyr	Leu 465
Gln	Lys	His	Ser	Tyr 470		Asn	Thr	Lys	Asn 475	Glu	Asp	Leu	Trp	Asp 480
Ser	Met	: Ala	Ser	11e 485		Pro	Thr	Asp	Gly 490	Val	. Lys	Gly	Met	Asp 495
Gly	Phe	е Суг	s Ser	500		Gln	His	Ser	Ser 505	Ser	Ser	Ser	His	Trp 510
His	Gln	n Glu	ı Gly	v Val 515		Val	Lys	Thr	Met 520		. Asn	Thr	Trp	Thr 525
Leu	Glr	a Arg	g Gly	, Phe	e Pro	Leu	Ile	Thr	: Ile	Thr	. Val	Arg	gly	Arg

				530					535					540
Asn	Val	His	Met	Lys 545	Gln	Glu	His	Tyr	Met 550	Lys	Gly	Ser	Asp	Gly 555
Ala	Pro	Asp	Thr	Gly 560	Tyr	Leu	Trp	His	Val 565	Pro	Leu	Thr	Phe	Ile 570
Thr	Ser	Lys	Ser	Asn 575	Met	Val	His	Arg	Phe 580	Leu	Leu	Lys	Thr	Lys 585
Thr	Asp	Val	Leu	Ile 590	Leu	Pro	Glu	Glu	Val 595	Glu	Trp	Ile	Lys	Phe 600
Asn	Val	Gly	Met	Asn 605	Gly	Tyr	Tyr	Ile	Val 610	His	Tyr	Glu	Asp	Asp 615
Gly	Trp	Asp	Ser	Leu 620	Thr	Gly	Leu	Leu	Lys 625	Gly	Thr	His	Thr	Ala 630
Val	Ser	Ser	Asn	Asp 635	Arg	Ala	Ser	Leu	Ile 640	Asn	Asn	Ala	Phe	Gln 645
Leu	Val	Ser	Ile	Gly 650	Lys	Leu	Ser	Ile	Glu 655	Lys	Ala	Leu	Asp	Leu 660
Ser	Leu	Tyr	Leu	Lys 665	His	Glu	Thr	Glu	Ile 670	Met	Pro	Val	Phe	Gln 675
Gly	Leu	Asn	Glu	Leu 680	Ile	Pro	Met	Tyr	Lys 685	Leu	Met	Glu	Lys	Arg 690
Asp	Met	Asn	Glu	Val 695	Glu	Thr	Gln	Phe	Lys 700	Ala	Phe	Leu	Ile	Arg 705
Leu	Leu	Arg	Asp	Leu 710	Ile	Asp	Lys	Gln	Thr 715	Trp	Thr	Asp	Glu	Gly 720
Ser	Val	Ser	Glu	Gln 725	Met	Leu	Arg	Ser	Glu 730	Leu	Leu	Leu	Leu	Ala 735
Суз	Val	His	Asn	Tyr 740	Gln	Pro	Cys	Val	Gln 745	Arg	Ala	Glu	Gly	Tyr 750
Phe	Arg	Lys	Trp	Lys 755	Glu	Ser	Asn	Gly	Asn 760	Leu	Ser	Leu	Pro	Val 765
Asp	Val	Thr	Leu	Ala 770	Val	Phe	Ala	Val	Gly 775	Ala	Gln	Ser	Thr	Glu 780
Gly	Trp	Asp	Phe	Leu 785		Ser	Lys	Tyr	Gln 790	Phe	Ser	Leu	Ser	Ser 795
Thr	Glu	Lys	s Ser	Gln 800		Glu	Phe	Ala	Leu 805	Cys	Arg	Thr	Gln	Asn 810
Lys	Glu	ı Lys	s Leu	Gln 815		Leu	Leu	Asp	Glu 820	Ser	Phe	. Lys	Gly	Asp 825
Lys	Il∈	e Lys	Thr	Gln 830		Phe	Pro	Gln	835	Leu	Thr	Leu	Ile	Gly 840
Arg	Asr	n Pro	Val	Gly	Tyr	Pro	Leu	Ala	Trp	Gln	Phe	. Leu	Arg	Lys

				845					850					855
Asn	Trp	Asn	Lys	Leu 860	Val	Gln	Lys	Phe	Glu 865	Leu	Gly	Ser	Ser	Ser 870
Ile	Ala	His	Met	Val 875	Met	Gly	Thr	Thr	Asn 880	Gln	Phe	Ser	Thr	Arg 885
Thr	Arg	Leu	Glu	Glu 890	Val	Lys	Gly	Phe	Phe 895	Ser	Ser	Leu	Lys	Glu 900
Asn	Gly	Ser	Gln	Leu 905	Arg	Cys	Val	Gln	Gln 910	Thr	Ile	Glu	Thr	Ile 915
Glu	Glu	Asn	Ile	Gly 920	Trp	Met	Asp	Lys	Asn 925	Phe	Asp	Lys	Ile	Arg 930
Val	Trp	Leu	Gln	Ser 935	Glu	Lys	Leu	Glu	Arg 940	Met				

<210> 354 <211> 1587 <212> DNA

<213> Homo sapiens

<400> 354 cagccacaga cgggtcatga gcgcggtatt actgctggcc ctcctggggt 50 tcatcctccc actgccagga gtgcaggcgc tgctctgcca gtttgggaca 100 gttcagcatg tgtggaaggt gtccgaccta ccccggcaat ggacccctaa 150 gaacaccagc tgcgacagcg gcttggggtg ccaggacacg ttgatgctca 200 ttgagagcgg accccaagtg agcctggtgc tctccaaggg ctgcacggag 250 gccaaggacc aggagccccg cgtcactgag caccggatgg gccccggcct 300 ctccctgatc tcctacacct tcgtgtgccg ccaggaggac ttctgcaaca 350 acctcgttaa ctccctcccg ctttgggccc cacageceec ageagaceca 400 ggatccttga ggtgcccagt ctgcttgtct atggaaggct gtctggaggg 450 gacaacagaa gagatctgcc ccaaggggac cacacactgt tatgatggcc 500 tecteagget caggggagga ggeatettet ceaatetgag agtecaggga 550 tgcatgcccc agccaggttg caacctgctc aatgggacac aggaaattgg 600 gcccgtgggt atgactgaga actgcaatag gaaagatttt ctgacctgtc 650 ategggggac caccattatg acacaggaa acttggctca agaacccact 700 gattggacca catcgaatac cgagatgtgc gaggtggggc aggtgtgtca 750 ggagacgctg ctgctcatag atgtaggact cacatcaacc ctggtgggga 800 caaaaggctg cagcactgtt ggggctcaaa attcccagaa gaccaccatc 850 cactcagece etectggggt gettgtggee teetataeee aettetgete 900 ctcggacctg tgcaatagtg ccagcagcag cagcgttctg ctgaactccc 950 tecetectea agetgeecet gteceaggag aceggeagtg tectacetgt 1000 gtgcagecec ttggaacetg tteaagtgge tecececgaa tgacetgeec 1050 caggggegec acteattgtt atgatgggta catteatete teaggaggtg 1100 ggetgteeae caaaatgage atteaggget gegtggeeca acetteeage 1150 ttettgttga aceaecaeg acaaateggg atetteetg egegtgagaa 1200 gegtgatgtg cageeteetg ceteteagea tgagggaggt ggggetgagg 1250 geetggagte teteaettgg ggggtggge tggeaetgge eecagegetg 1300 tggtggggag tggtttgeee tteetgetaa etetataee eecaegatte 1350 tteaecgetg etgaecaece acaeteaaee teeetetgae eteataaeet 1400 aatggeettg gaeaecagat tetteeeat tetgteeatg aateatete 1450 eecaeacaea ateatteata tetaeteaee taaeageaae aetggggaga 1500 geetggagea teeggaettg eectatgga gaggggaege tggaggagtg 1550 getgeatgta tetgataata eagaeeettg eetttea 1587

<210> 355

<211> 437

<212> PRT

<213> Homo sapiens

 Adot 1
 Ser Ala
 Val 5
 Leu 5
 Leu Leu Ala Leu Leu Cys Gln 70
 Phe Gly Fhe Ile Leu Pro 15
 Leu Pro 15

 Leu Pro 6
 Gly Val 6
 Ala Leu Leu Cys Gln 75
 Phe Gly Thr Val 6
 Ala 30

 His Val Trp Lys Val 35
 Ser Asp Leu Pro Arg 6
 Gln Trp Thr Pro Lys 45

 Asn Thr Ser Cys Asp 50
 Ser Gly Leu Gly Cys Gln Asp Thr Leu Met 60

 Leu Ile Glu Ser Gly Pro 65
 Pro 61
 Val Leu Ser Leu Ser Lys Gly 75

 Cys Thr Glu Ala Lys 80
 Asp Gln Glu Pro 85
 Val Thr Glu His Arg 90

 Met Gly Pro 61
 Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg 105

 Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp 120

 Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val 135

 Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile 150

 Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu

				155					160					165
Arg	Gly	Gly	Gly	Ile 170	Phe	Ser	Asn	Leu	Arg 175	Val	Gln	Gly	Суз	Met 180
Pro	Gln	Pro	Gly	Cys 185	Asn	Leu	Leu	Asn	Gly 190	Thr	Gln	Glu	Ile	Gly 195
Pro	Val	Gly	Met	Thr 200	Glu	Asn	Cys	Asn	Arg 205	Lys	Asp	Phe	Leu	Thr 210
Суз	His	Arg	Gly	Thr 215	Thr	Ile	Met	Thr	His 220	Gly	Asn	Leu	Ala	Gln 225
Glu	Pro	Thr	Asp	Trp 230	Thr	Thr	Ser	Asn	Thr 235	Glu	Met	Cys	Glu	Val 240
Gly	Gln	Val	Cys	Gln 245	Glu	Thr	Leu	Leu	Leu 250	Ile	Asp	Val	Gly	Leu 255
Thr	Ser	Thr	Leu	Val 260	Gly	Thr	Lys	Gly	Cys 265	Ser	Thr	Val	Gly	Ala 270
Gln	Asn	Ser	Gln	Lys 275	Thr	Thr	Ile	His	Ser 280	Ala	Pro	Pro	Gly	Val 285
Leu	Val	Ala	Ser	Tyr 290	Thr	His	Phe	Cys	Ser 295	Ser	Asp	Leu	Cys	Asn 300
Ser	Ala	Ser	Ser	Ser 305	Ser	Val	Leu	Leu	Asn 310	Ser	Leu	Pro	Pro	Gln 315
Ala	Ala	Pro	Val	Pro 320	Gly	Asp	Arg	Gln	Cys 325	Pro	Thr	Cys	Val	Gln 330
Pro	Leu	Gly	Thr	Cys 335		Ser	Gly	Ser	Pro 340	Arg	Met	Thr	Cys	Pro 345
Arg	Gly	Ala	Thr	His 350		Tyr	Asp	Gly	Туr 355	Ile	His	Leu	Ser	Gly 360
Gly	Gly	Leu	Ser	Thr 365	Lys	Met	Ser	Ile	Gln 370	Gly	Суз	Val	Ala	Gln 375
Pro	Ser	Ser	Phe	Leu 380	Leu	Asn	His	Thr	Arg 385	Gln	Ile	Gly	Ile	Phe 390
Ser	Ala	Arg	Glu	Lys 395		Asp	Val	Gln	Pro 400	Pro	Ala	Ser	Gln	ніs 405
Glu	Gly	Gly	Gly	Ala 410		Gly	Leu	Glu	Ser 415	Leu	Thr	Trp	Gly	Val 420
Gly	Leu	Ala	Leu	Ala 425	Pro	Ala	Leu	Trp	Trp 430	Gly	Val	Val	. Cys	Pro 435

Ser Cys

<210> 356 <211> 1238 <212> DNA <213> Homo sapiens

<400> 356 gcgacgggca ggacgccccg ttcgcctagc gcgtgctcag gagttggtgt 50 cctgcctgcg ctcaggatga gggggaatct ggccctggtg ggcgttctaa 100 tcagcctggc cttcctgtca ctgctgccat ctggacatcc tcagccggct 150 ggcgatgacg cctgctctgt gcagatcctc gtccctggcc tcaaagggga 200 tgcgggagag aagggagaca aaggcgcccc cggacggcct ggaagagtcg 250 gccccacggg agaaaaagga gacatggggg acaaaggaca gaaaggcagt 300 gtgggtcgtc atggaaaaat tggtcccatt ggctctaaag gtgagaaagg 350 agattccggt gacataggac cccctggtcc taatggagaa ccaggcctcc 400 catgtgagtg cagccagctg cgcaaggcca tcggggagat ggacaaccag 450 gtctctcagc tgaccagcga gctcaagttc atcaagaatg ctgtcgccgg 500 tgtgcgcgag acggagagca agatctacct gctggtgaag gaggagaagc 550 gctacgcgga cgcccagctg tcctgccagg gccgcggggg cacgctgagc 600 atgcccaagg acgaggctgc caatggcctg atggccgcat acctggcgca 650 agccggcctg gcccgtgtct tcatcggcat caacgacctg gagaaggagg 700 gcgccttcgt gtactctgac cactccccca tgcggacctt caacaagtgg 750 cgcagcggtg agcccaacaa tgcctacgac gaggaggact gcgtggagat 800 ggtggcctcg ggcggctgga acgacgtggc ctgccacacc accatgtact 850 tcatgtgtga gtttgacaag gagaacatgt gagcctcagg ctggggctgc 900 ccattggggg ccccacatgt ccctgcaggg ttggcaggga cagagcccag 950 accatggtgc cagccaggga gctgtccctc tgtgaagggt ggaggctcac 1000 tgagtagagg gctgttgtct aaactgagaa aatggcctat gcttaagagg 1050 aaaatgaaag tgttcctggg gtgctgtctc tgaagaagca gagtttcatt 1100 acctgtattg tagccccaat gtcattatgt aattattacc cagaattgct 1150 cttccataaa gcttgtgcct ttgtccaagc tatacaataa aatctttaag 1200 tagtgcagta gttaagtcca aaaaaaaaa aaaaaaaa 1238

<sup>&</sup>lt;210> 357

<sup>&</sup>lt;211> 271

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 357

Met Arg Gly Asn Leu Ala Leu Val Gly Val Leu Ile Ser Leu Ala 1 5 10 15

Phe Leu Ser Leu Leu Pro Ser Gly His Pro Gln Pro Ala Gly Asp 20 25 30

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Asp Ala Cys Ser Val Gln Ile Leu Val Pro Gly Leu Lys Gly Asp
Ala Gly Glu Lys Gly Asp Lys Gly Ala Pro Gly Arg Pro Gly Arg
Val Gly Pro Thr Gly Glu Lys Gly Asp Met Gly Asp Lys Gly Gln
                                                          75
Lys Gly Ser Val Gly Arg His Gly Lys Ile Gly Pro Ile Gly Ser
Lys Gly Glu Lys Gly Asp Ser Gly Asp Ile Gly Pro Pro Gly Pro
Asn Gly Glu Pro Gly Leu Pro Cys Glu Cys Ser Gln Leu Arg Lys
Ala Ile Gly Glu Met Asp Asn Gln Val Ser Gln Leu Thr Ser Glu
                                                         135
                                     130
                125
Leu Lys Phe Ile Lys Asn Ala Val Ala Gly Val Arg Glu Thr Glu
                140
Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu Lys Arg Tyr Ala Asp
Ala Gln Leu Ser Cys Gln Gly Arg Gly Gly Thr Leu Ser Met Pro
                                                         180
                                     175
Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr Leu Ala Gln
                 185
Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu Glu Lys
                                     205
Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr Phe
Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu
                                     235
                 230
Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala
Cys His Thr Thr Met Tyr Phe Met Cys Glu Phe Asp Lys Glu Asn
                                     265
                 260
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Met

<210> 358

<211> 972

<212> DNA

<213> Homo sapiens

<400> 358
agtgactgca gccttcctag atcccctcca ctcggtttct ctctttgcag 50
gagcaccggc agcaccagtg tgtgagggga gcaggcagcg gtcctagcca 100
gttccttgat cctgccagac cacccagccc ccggcacaga gctgctccac 150

aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200 tagctcagag ctttggggct gtctgtaagg agccacagga ggaggtggtt 250 cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300 gagactette aaaageeact catetetgga gggattgete aaageeetga 350 gccaggctag cacagatcct aaggaatcaa catctcccga gaaacgtgac 400 atgcatgact tctttgtggg acttatgggc aagaggagcg tccagccaga 450 gggaaagaca ggacctttct taccttcagt gagggttcct cggccccttc 500 atcccaatca gcttggatcc acaggaaagt cttccctggg aacagaggag 550 cagagacctt tataagactc tcctacggat gtgaatcaag agaacgtccc 600 cagctttggc atcctcaagt atcccccgag agcagaatag gtactccact 650 teeggaetee tggaetgeat taggaagaee tettteeetg teecaateee 700 caggtgcgca cgctcctgtt accctttctc ttccctgttc ttgtaacatt 750 cttgtgcttt gactccttct ccatcttttc tacctgaccc tggtgtggaa 800 actgcatagt gaatateece aaceecaatg ggcattgact gtagaatace 850 ctagagttcc tgtagtgtcc tacattaaaa atataatgtc tctctctatt 900 aaaaaaaaa aa aaaaaaaaa aa 972

<210> 359

<211> 135

<212> PRT

<213> Homo sapiens

<400> 359

Met Arg Ile Met Leu Leu Phe Thr Ala Ile Leu Ala Phe Ser Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ala Gln Ser Phe Gly Ala Val Cys Lys Glu Pro Gln Glu Glu Val 20 25 30

Val Pro Gly Gly Gly Arg Ser Lys Arg Asp Pro Asp Leu Tyr Gln 35 40 45

Leu Leu Gln Arg Leu Phe Lys Ser His Ser Ser Leu Glu Gly Leu 50 55 60

Leu Lys Ala Leu Ser Gln Ala Ser Thr Asp Pro Lys Glu Ser Thr 65 70 75

Ser Pro Glu Lys Arg Asp Met His Asp Phe Phe Val Gly Leu Met

Gly Lys Arg Ser Val Gln Pro Glu Gly Lys Thr Gly Pro Phe Leu 95 100 105

Pro Ser Val Arg Val Pro Arg Pro Leu His Pro Asn Gln Leu Gly
110 115 120

AND DESCRIPTION OF THE PARTY OF

Ser Thr Gly Lys Ser Ser Leu Gly Thr Glu Glu Gln Arg Pro Leu 125 130 135

<210> 360

<211> 1738

<212> DNA

<213> Homo sapiens

<400> 360 gggcgtctcc ggctgctcct attgagctgt ctgctcgctg tgcccgctgt 50 geetgetgtg eeegegetgt egeegetget acceegtetg etggaegegg 100 gagacgccag cgagctggtg attggagccc tgcggagagc tcaagcgccc 150 agetetgeec caggageeca ggetgeeceg tgagteecat agttgetgea 200 ggagtggagc catgagctgc gtcctgggtg gtgtcatccc cttggggctg 250 ctgttcctgg tctgcggatc ccaaggctac ctcctgccca acgtcactct 300 cttagaggag ctgctcagca aataccagca caacgagtct cactcccggg 350 teegeagage cateeceagg gaggacaagg aggagateet catgetgeae 400 aacaagcttc ggggccaggt gcagcctcag gcctccaaca tggagtacat 450 ggtgagcgcc ggctccggcc gcagaggctg gcaccggggg tggggcctgg 500 gccaccagcc tgctctgttc cccagccagc tctgttcccc agccagtgcg 550 tgtgatggct ggctcagggt ctcctctggc aggggaggat cccggctctg 600 ttctgttttg tttgtttgtt ttgagacagg gtctcactct gccactgacg 650 ctggagtgca atggcacaat cgtcatgccc tgaaacctta gactcccggg 700 gttaagcgat cctgcttcag cctcccaagt agctggaact acaggcatgc 750 accatggtgc ccagctagat tttaaatatt ttgtggagat gggggtcttg 800 ctacgttgcc caggctggtc ttgaactcct aggctcaagc aatcctcctg 850 cctcagcctc tcaaagtgct aggattatag gcatgagtca ccctgtctgg 900 ctctggctct gttcttaaca ttctgccaaa acaacacacg tgggttccct 950 gtgcagagcc tgcctcgttg ccttcatgtc actcttggta gctccactgg 1000 gaacacaget etcageettt eccaeetgga ggeagagtgg ggaggggeee 1050 agggctgggc tttgctgatg ctgatctcag ctgtgccaca cgctagctgc 1100 accaccetga etteteetta geeegtgtga geeteaettt eeaettggag 1150 agtectteet egegtggttg ceatgactgt gagataagte gaggetgtga 1200 agggcccggc acagactgac ctgcctcccc aacccctagg ctttgctaac 1250 cgggaaagga gctaacggtg acagaagaca gccaaggtca accctcccgg 1300 gtgattgtga tgggtgttcc aggtgtggtt gggcgatgct gctacttgac 1350

cccaagetee agtgtgaaa etteetteet ggetggttt ccagaactae 1400 agaggaatgg accacagtet tecagggtee eteetegtee accaaceggg 1450 ageeteeace ttggecatee gteagetatg aatggettt taaacaaace 1500 cacgteecag cctgggtaae atggtaaage eeegteeteta caaaaaaate 1550 caagttagee gggeatggt gtgegeacet gtagteecag etgeagtggg 1600 actgaggtgg aggtggagg etgeagtgg agetgagga ggaggatege 1650 ttgageetgg gtgacagag etgeagtgg etgaaatge accaetgeae 1700 tecageetgg gtgacagage aagaeecetgt etcaaaaa 1738

<210> 361

<211> 159

<212> PRT

<213> Homo sapiens

<400> 361

Met Ser Cys Val Leu Gly Gly Val Ile Pro Leu Gly Leu Leu Phe 1 5 10

Leu Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu 20 25 30

Leu Glu Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser 35 40 45

Arg Val Arg Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu
50 55 60

Met Leu His Asn Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser
65 70 75

Asn Met Glu Tyr Met Val Ser Ala Gly Ser Gly Arg Arg Gly Trp 80 85 90

His Arg Gly Trp Gly Leu Gly His Gln Pro Ala Leu Phe Pro Ser 95  $\phantom{\bigg|}100\phantom{\bigg|}$  105

Gln Leu Cys Ser Pro Ala Ser Ala Cys Asp Gly Trp Leu Arg Val 110 115 120

Ser Ser Gly Arg Gly Gly Ser Arg Leu Cys Ser Val Leu Phe Val 125 130 135

Cys Phe Glu Thr Gly Ser His Ser Ala Thr Asp Ala Gly Val Gln
140 145 150

Trp His Asn Arg His Ala Leu Lys Pro 155

<210> 362

<211> 422

<212> DNA

<213> Homo sapiens

<400> 362

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ggccactatg gggtctgggc tgccccttgt cctcctcttg accetccttg 100 gcagctcaca tggaacaggg ccgggtatga ctttgcaact gaagctgaag 150 gagtctttc tgacaaattc ctcctatgag tccagcttcc tggaattgct 200 tgaaaagctc tgcctcctcc tccatctcc ttcagggacc agcgtcaccc 250 tccaccatgc aagatctcaa caccatgttg tctgcaacac atgacagcca 300 ttgaagcctg tgtccttctt ggcccgggct tttgggccgg ggatgcagga 350 ggcaggcccc gaccctgtct ttcagcaggc ccccaccctc ctgagtggca 400 ataaataaaa ttcggtatgc tg 422

<210> 363

<211> 78

<212> PRT

<213> Homo sapiens

<400> 363

Met Gly Ser Gly Leu Pro Leu Val Leu Leu Leu Thr Leu Leu Gly 1 5 10 15

Ser Ser His Gly Thr Gly Pro Gly Met Thr Leu Gln Leu Lys Leu
20 25 30

Lys Glu Ser Phe Leu Thr Asn Ser Ser Tyr Glu Ser Ser Phe Leu 35 40 45

Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly
50 55 60

Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val 65 70 75

Cys Asn Thr

<210> 364

<211> 826

<212> DNA

<213> Homo sapiens

 caagtgagtg ttaccttttc acttagtagg atgtgttgtt acgctagtaa 500 aatagaaacc tgtgtttatt ctcaggtatt ttagaaacaa cagccatcat 550 tttattttat gtgtgtgttc ttggctgtat tcataaatta tatattttgg 600 gctatcaaat attacttcat tcaatataaa taacaatagt agaagttgtt 650 tacttagata tgctttctag ttgcattttc tcagcctatg taagactact 700 ttgttgtaat agcctttgaa atttacagta ctgtctctc actatcttca 750 gattacttga ttcaaataaa ccaattatgt ttgtaattga tattaataaa 800 accagaataa aagttcatat ctaccc 826

<210> 365

<211> 67

<212> PRT

<213> Homo sapiens

<400> 365

Met Ile Gly Tyr Tyr Leu Ile Leu Phe Leu Met Trp Gly Ser Ser 1 5 10 15

Thr Val Phe Cys Val Leu Leu Ile Phe Thr Ile Ala Glu Ala Ser  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Phe Ser Val Glu Asn Glu Cys Leu Val Asp Leu Cys Leu Leu Arg 35 40 45

Ile Cys Tyr Lys Leu Ser Gly Val Pro Asn Gln Cys Arg Val Pro  $50 \hspace{1cm} 55 \hspace{1cm} 60 \hspace{1cm}$ 

Leu Pro Ser Asp Cys Ser Lys

<210> 366

<211> 2475

<212> DNA

<213> Homo sapiens

<400> 366

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aaaagatccg gactctgctg aatgcaagct gtgacaacat gctgatgggc 550 ataaagtctt tgaaaatagt gaagaagatg atggacacac atggctcttg 600 gatgaaagat gctgtctata actctccaaa ggtgtactta ttaattggat 650 ccagaaacaa cactgtttgg gaatttgcaa acatacgggc attcatggag 700 gataacacca agccagctcc ccggaagcaa atcctaacac tttcctggca 750 gggaacaggc caagtgatct acaaaggttt tctatttttt cataaccaag 800 caacttctaa tgagataatc aaatataacc tgcagaagag gactgtggaa 850 gatcgaatgc tgctcccagg aggggtaggc cgagcattgg tttaccagca 900 ctcccctca acttacattg acctggctgt ggatgagcat gggctctggg 950 ccatccactc tgggccaggc acccatagcc atttggttct cacaaagatt 1000 gagccgggca cactgggagt ggagcattca tgggataccc catgcagaag 1050 ccaggatgct gaagcctcat tcctcttgtg tggggttctc tatgtggtct 1100 acagtactgg gggccagggc cctcatcgca tcacctgcat ctatgatcca 1150 ctgggcacta tcagtgagga ggacttgccc aacttgttct tccccaagag 1200 accaagaagt cactccatga tccattacaa ccccagagat aagcagctct 1250 atgcctggaa tgaaggaaac cagatcattt acaaactcca gacaaagaga 1300 aagetgeete tgaagtaatg cattacaget gtgagaaaga geactgtgge 1350 tttggcagct gttctacagg acagtgaggc tatagcccct tcacaatata 1400 gtatccctct aatcacacac aggaagagtg tgtagaagtg gaaatacgta 1450 tgcctccttt cccaaatgtc actgccttag gtatcttcca agagcttaga 1500 tgagagcata tcatcaggaa agtttcaaca atgtccatta ctcccccaaa 1550 cctcctggct ctcaaggatg accacattct gatacagcct acttcaagcc 1600 ttttgtttta ctgctcccca gcatttactg taactctgcc atcttccctc 1650 ccacaattag agttgtatgc cagcccctaa tattcaccac tggcttttct 1700 ctcccctggc ctttgctgaa gctcttccct ctttttcaaa tgtctattga 1750 tattctccca ttttcactgc ccaactaaaa tactattaat atttctttct 1800 tttcttttct tttttttgag acaaggtctc actatgttgc ccaggctggt 1850 ctcaaactcc agagctcaag agatcctcct gcctcagcct cctaagtacc 1900 tgggattaca ggcatgtgcc accacacctg gcttaaaata ctatttctta 1950 ttgaggttta acctctattt cccctagccc tgtccttcca ctaagcttgg 2000 tagatgtaat aataaagtga aaatattaac atttgaatat cgctttccag 2050 gtgtggagtg tttgcacatc attgaattct cgtttcacct ttgtgaaaca 2100

tgcacaagtc tttacagctg tcattctaga gtttaggtga gtaacacaat 2150 tacaaagtga aagatacagc tagaaaatac tacaaatccc atagttttc 2200 cattgcccaa ggaagcatca aatacgtatg tttgttcacc tactcttata 2250 gtcaatgcgt tcatcgtttc agcctaaaaa taatagtctg tccctttagc 2300 cagttttcat gtctgcacaa gacctttcaa taggcctttc aaatgataat 2350 tcctccagaa aaccagtcta agggtgagga ccccaactct agcctcctct 2400 tgtcttgctg tcctctgttt ctctctttct gctttaaatt caataaaagt 2450 gacactgagc aaaaaaaaaa aaaaa 2475

<210> 367

<211> 402

<212> PRT

<213> Homo sapiens

Gln Glu Phe Ser Lys Asn Ile Ser Val Met Leu Gly Arg Cys Gln
70
75

Thr Tyr Thr Ser Glu Tyr Lys Ser Ala Val Gly Asn Leu Ala Leu 80 85 90

Arg Val Glu Arg Ala Gln Arg Glu Ile Asp Tyr Ile Gln Tyr Leu 95 100 105

Arg Glu Ala Asp Glu Cys Ile Val Ser Glu Asp Lys Thr Leu Ala 110 115

Glu Met Leu Gln Glu Ala Glu Glu Glu Lys Lys Ile Arg Thr 125 130 135

Leu Leu Asn Ala Ser Cys Asp Asn Met Leu Met Gly Ile Lys Ser 140 145

Leu Lys Ile Val Lys Lys Met Met Asp Thr His Gly Ser Trp Met 155 160 160

Lys Asp Ala Val Tyr Asn Ser Pro Lys Val Tyr Leu Leu Ile Gly 170 175 180

Ser Arg Asn Asn Thr Val Trp Glu Phe Ala Asn Ile Arg Ala Phe 185 190 195

Met Glu Asp Asn Thr Lys Pro Ala Pro Arg Lys Gln Ile Leu Thr 200 205

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Leu Ser Trp Gln Gly Thr Gly Gln Val Ile Tyr Lys Gly Phe Leu
                                                          225
Phe Phe His Asn Gln Ala Thr Ser Asn Glu Ile Ile Lys Tyr Asn
Leu Gln Lys Arg Thr Val Glu Asp Arg Met Leu Leu Pro Gly Gly
                                                          255
                                     250
Val Gly Arg Ala Leu Val Tyr Gln His Ser Pro Ser Thr Tyr Ile
                260
Asp Leu Ala Val Asp Glu His Gly Leu Trp Ala Ile His Ser Gly
                                     280
                                                          285
                275
Pro Gly Thr His Ser His Leu Val Leu Thr Lys Ile Glu Pro Gly
                                                          300
                                     295
Thr Leu Gly Val Glu His Ser Trp Asp Thr Pro Cys Arg Ser Gln
                                     310
                 305
Asp Ala Glu Ala Ser Phe Leu Leu Cys Gly Val Leu Tyr Val Val
                                                          330
                                     325
                 320
Tyr Ser Thr Gly Gly Gln Gly Pro His Arg Ile Thr Cys Ile Tyr
                                                          345
Asp Pro Leu Gly Thr Ile Ser Glu Glu Asp Leu Pro Asn Leu Phe
                                     355
                 350
Phe Pro Lys Arg Pro Arg Ser His Ser Met Ile His Tyr Asn Pro
                                      370
                 365
Arg Asp Lys Gln Leu Tyr Ala Trp Asn Glu Gly Asn Gln Ile Ile
                                                          390
                 380
Tyr Lys Leu Gln Thr Lys Arg Lys Leu Pro Leu Lys
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<210> 368

<211> 2281

<212> DNA

<213> Homo sapiens

395

<400> 368
gggcgcccgc gtactcacta gctgaggtgg cagtggttcc accaacatgg 50
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ctggccctga tggcgacggc ggcggtagcg cggggtggc tgcgcggg 150
ggaggagagg agcggccggc ccgcctgcca aaaagcaaat ggatttccac 200
ctgacaaatc ttcgggatcc aagaagcaga aacaatatca gcggattcgg 250
aaggagaagc ctcaacaaca caacttcacc caccgcctcc tggctgcagc 300
tctgaagagc cacagcggga acatatcttg catggacttt agcagcaatg 350
gcaaatacct ggctacctgt gcagatgatc gcaccatccg catctggagc 400
accaaggact tcctgcagcg agagcaccgc agcatgagag ccaacgtgga 450

gctggaccac gccaccctgg tgcgcttcag ccctgactgc agagccttca 500 tcgtctggct ggccaacggg gacaccctcc gtgtcttcaa gatgaccaag 550 cgggaggatg ggggctacac cttcacagcc accccagagg acttccctaa 600 aaagcacaag gcgcctgtca tcgacattgg cattgctaac acagggaagt 650 ttatcatgac tgcctccagt gacaccactg tcctcatctg gagcctgaag 700 ggtcaagtgc tgtctaccat caacaccaac cagatgaaca acacacacgc 750 tgctgtatct ccctgtggca gatttgtagc ctcgtgtggc ttcaccccag 800 atgtgaaggt ttgggaagtc tgctttggaa agaaggggga gttccaggag 850 gtggtgcgag ccttcgaact aaagggccac tccgcggctg tgcactcgtt 900 tgctttctcc aacgactcac ggaggatggc ttctgtctcc aaggatggta 950 catggaaact gtgggacaca gatgtggaat acaagaagaa gcaggacccc 1000 tacttgctga agacaggccg ctttgaagag gcggcgggtg ccgcgccgtg 1050 ccgcctggcc ctctcccca acgcccaggt cttggccttg gccagtggca 1100 gtagtattca tctctacaat acccggcggg gcgagaagga ggagtgcttt 1150 gagegggtee atggegagtg tategeeaac ttgteetttg acateaetgg 1200 ccgctttctg gcctcctgtg gggaccgggc ggtgcggctg tttcacaaca 1250 ctcctggcca ccgagccatg gtggaggaga tgcagggcca cctgaagcgg 1300 gcctccaacg agagcacccg ccagaggctg cagcagcagc tgacccaggc 1350 ccaagagacc ctgaagagcc tgggtgccct gaagaagtga ctctgggagg 1400 gcccggcgca gaggattgag gaggagggat ctggcctcct catggcactg 1450 ctgccatctt tcctcccagg tggaagcctt tcagaaggag tctcctggtt 1500 ttcttactgg tggccctgct tcttcccatt gaaactactc ttgtctactt 1550 aggtctctct cttcttgctg gctgtgactc ctccctgact agtggccaag 1600 gtgcttttct tcctcccagg cccagtgggt ggaatctgtc cccacctggc 1650 tggccttgtg gcagcacatc ctcacaccca aagaagtttg taaatgttcc 1750 agaacaacct agagaacacc tgagtactaa gcagcagttt tgcaaggatg 1800 ggagactggg atagcttccc atcacagaac tgtgttccat caaaaagaca 1850 ctaagggatt tccttctggg cctcagttct atttgtaaga tggagaataa 1900 tcctctctgt gaactccttg caaagatgat atgaggctaa gagaatatca 1950 agtccccagg tctggaagaa aagtagaaaa gagtagtact attgtccaat 2000 gtcatgaaag tggtaaaagt gggaaccagt gtgctttgaa accaaattag 2050

<210> 369

<211> 447

<212> PRT

<213> Homo sapiens

<400> 369

Met Glu Leu Ser Gln Met Ser Glu Leu Met Gly Leu Ser Val Leu
1 5 10 15

Leu Gly Leu Leu Ala Leu Met Ala Thr Ala Ala Val Ala Arg Gly 20 25 30

Trp Leu Arg Ala Gly Glu Glu Arg Ser Gly Arg Pro Ala Cys Gln
35 40 45

Lys Ala Asn Gly Phe Pro Pro Asp Lys Ser Ser Gly Ser Lys Lys 50 55 60

Gln Lys Gln Tyr Gln Arg Ile Arg Lys Glu Lys Pro Gln Gln His
65 70 75

Asn Phe Thr His Arg Leu Leu Ala Ala Leu Lys Ser His Ser 80 85

Gly Asn Ile Ser Cys Met Asp Phe Ser Ser Asn Gly Lys Tyr Leu 95 100 105

Ala Thr Cys Ala Asp Asp Arg Thr Ile Arg Ile Trp Ser Thr Lys
110 115 120

Asp Phe Leu Gln Arg Glu His Arg Ser Met Arg Ala Asn Val Glu 125 130 135

Leu Asp His Ala Thr Leu Val Arg Phe Ser Pro Asp Cys Arg Ala 140 145 150

Phe Ile Val Trp Leu Ala Asn Gly Asp Thr Leu Arg Val Phe Lys 155 160 165

Met Thr Lys Arg Glu Asp Gly Gly Tyr Thr Phe Thr Ala Thr Pro

Glu Asp Phe Pro Lys Lys His Lys Ala Pro Val Ile Asp Ile Gly 185 190 195

Ile Ala Asn Thr Gly Lys Phe Ile Met Thr Ala Ser Ser Asp Thr 200 205 210

Thr Val Leu Ile Trp Ser Leu Lys Gly Gln Val Leu Ser Thr Ile 215 220 225

Asn Thr Asn Gln Met Asn Asn Thr His Ala Ala Val Ser Pro Cys 230 235 240

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Gly Arg Phe Val Ala Ser Cys Gly Phe Thr Pro Asp Val Lys Val
Trp Glu Val Cys Phe Gly Lys Lys Gly Glu Phe Gln Glu Val Val
Arg Ala Phe Glu Leu Lys Gly His Ser Ala Ala Val His Ser Phe
                275
                                    280
Ala Phe Ser Asn Asp Ser Arg Arg Met Ala Ser Val Ser Lys Asp
                290
Gly Thr Trp Lys Leu Trp Asp Thr Asp Val Glu Tyr Lys Lys
                                                         315
                305
                                     310
Gln Asp Pro Tyr Leu Leu Lys Thr Gly Arg Phe Glu Glu Ala Ala
                                                         330
                                     325
Gly Ala Ala Pro Cys Arg Leu Ala Leu Ser Pro Asn Ala Gln Val
                                     340
                335
Leu Ala Leu Ala Ser Gly Ser Ser Ile His Leu Tyr Asn Thr Arg
Arg Gly Glu Lys Glu Glu Cys Phe Glu Arg Val His Gly Glu Cys
Ile Ala Asn Leu Ser Phe Asp Ile Thr Gly Arg Phe Leu Ala Ser
                380
                                     385
Cys Gly Asp Arg Ala Val Arg Leu Phe His Asn Thr Pro Gly His
                395
Arg Ala Met Val Glu Glu Met Gln Gly His Leu Lys Arg Ala Ser
                                                         420
                                     415
                410
Asn Glu Ser Thr Arg Gln Arg Leu Gln Gln Gln Leu Thr Gln Ala
                 425
                                     430
Gln Glu Thr Leu Lys Ser Leu Gly Ala Leu Lys Lys
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<210> 370

<211> 1415

<212> DNA

<213> Homo sapiens

<400> 370
tggcctcccc agcttgccag gcacaaggct gagcggagg aagcgagagg 50

catctaagca ggcagtgttt tgccttcacc ccaagtgacc atgagaggtg 100
ccacgcgagt ctcaatcatg ctcctctag taactgtgtc tgactgtgct 150
gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
ctgtgccatc agcctgtggc ttcgagggct gcggatgtgc accccgctgg 250
ggcgggaagg cgaggagtgc caccccggca gccacaaggt ccccttcttc 300
aggaaacgca agcaccaca ctgtccttgc ttgcccaacc tgctgtgctc 350
caggttcccg gacggcaggt accgctgctc catggacttg aagaacatca 400

atttttaggc gcttgcctgg tctcaggata cccaccatcc ttttcctgag 450 cacagootgg atttttattt otgocatgaa accoagotoo catgactoto 500 ccagtcccta cactgactac cctgatctct cttgtctagt acgcacatat 550 qcacacaggc agacatacct cccatcatga catggtcccc aggctggcct 600 gaggatgtca cagcttgagg ctgtggtgtg aaaggtggcc agcctggttc 650 tetteeetge teaggetgee agagaggtgg taaatggeag aaaggacatt 700 cccctcccc tccccaggtg acctgctctc tttcctgggc cctgcccctc 750 tececacatg tatecetegg tetgaattag acatteetgg geacaggete 800 ttgggtgcat tgctcagagt cccaggtcct ggcctgaccc tcaggccctt 850 cacgtgaggt ctgtgaggac caatttgtgg gtagttcatc ttccctcgat 900 tggttaactc cttagtttca gaccacagac tcaagattgg ctcttcccag 950 agggcagcag acagtcaccc caaggcaggt gtagggagcc cagggaggcc 1000 aatcagcccc ctgaagactc tggtcccagt cagcctgtgg cttgtggcct 1050 gtgacctgtg accttctgcc agaattgtca tgcctctgag gccccctctt 1100 accacacttt accagttaac cactgaagcc cccaattccc acagcttttc 1150 cattaaaatg caaatggtgg tggttcaatc taatctgata ttgacatatt 1200 agaaggcaat tagggtgttt ccttaaacaa ctcctttcca aggatcagcc 1250 ctgagagcag gttggtgact ttgaggaggg cagtcctctg tccagattgg 1300 ggtgggagca agggacaggg agcagggcag gggctgaaag gggcactgat 1350 tcagaccagg gaggcaacta cacaccaaca tgctggcttt agaataaaag 1400 caccaactga aaaaa 1415

<210> 371

<211> 105

<212> PRT

<213> Homo sapiens

<400> 371

Met Arg Gly Ala Thr Arg Val Ser Ile Met Leu Leu Leu Val Thr 1 5 10 15

Val Ser Asp Cys Ala Val Ile Thr Gly Ala Cys Glu Arg Asp Val 20 25 30

Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile Ser Leu Trp Leu Arg 35 40 45

Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu Gly Glu Glu Cys 50 55 60

His Pro Gly Ser His Lys Val Pro Phe Phe Arg Lys Arg Lys His 65 70 75

His Thr Cys Pro Cys Leu Pro Asn Leu Leu Cys Ser Arg Phe Pro 80 85 90

Asp Gly Arg Tyr Arg Cys Ser Met Asp Leu Lys Asn Ile Asn Phe 95 100 105

- <210> 372
- <211> 1281
- <212> DNA
- <213> Homo sapiens

<400> 372 agcgcccggg cgtcggggcg gtaaaaggcc ggcagaaggg aggcacttga 50 gaaatgtctt tcctccagga cccaagtttc ttcaccatgg ggatgtggtc 100 cattggtgca ggagccctgg gggctgctgc cttggcattg ctgcttgcca 150 acacagacgt gtttctgtcc aagccccaga aagcggccct ggagtacctg 200 gaggatatag acctgaaaac actggagaag gaaccaagga ctttcaaagc 250 aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc 300 caggetgttt cetetgtega gaggaagetg eggatetgte etecetgaaa 350 agcatgttgg accagctggg cgtccccctc tatgcagtgg taaaggagca 400 catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct 450 tcctggatga aaagaaaaag ttctatggtc cacaaaggcg gaagatgatg 500 tttatgggat ttatccgtct gggagtgtgg tacaacttct tccgagcctg 550 gaacggaggc ttctctggaa acctggaagg agaaggcttc atccttgggg 600 gagttttcgt ggtgggatca ggaaagcagg gcattcttct tgagcaccga 650 gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc 700 taagatgatc aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg 750 aaactgccca gctcagggat aaccagggac attcacctgt gttcatggga 800 tgtattgttt ccactcgtgt ccctaaggag tgagaaaccc atttatactc 850 tactctcagt atggattatt aatgtatttt aatattctgt ttaggcccac 900 taaggcaaaa tagccccaaa acaagactga caaaaatctg aaaaactaat 950 gaggattatt aagctaaaac ctgggaaata ggaggcttaa aattgactgc 1000 caggetgggt geagtggete acaeetgtaa teecageaet ttgggaggee 1050 aaggtgagca agtcacttga ggtcgggagt tcgagaccag cctgagcaac 1100 atggcgaaac cccgtctcta ctaaaaatac aaaaatcacc cgggtgtggt 1150 ggcaggcacc tgtagtccca gctacccggg aggctgaggc aggagaatca 1200 cttgaacctg ggaggtggag gttgcggtga gctgagatca caccactgta 1250 ttccagcctg ggtgactgag actctaacta a 1281

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<210> 373
<211> 229
<212> PRT
<213> Homo sapiens
<400> 373
Met Ser Phe Leu Gln Asp Pro Ser Phe Phe Thr Met Gly Met Trp
 Ser Ile Gly Ala Gly Ala Leu Gly Ala Ala Leu Ala Leu Leu
 Leu Ala Asn Thr Asp Val Phe Leu Ser Lys Pro Gln Lys Ala Ala
 Leu Glu Tyr Leu Glu Asp Ile Asp Leu Lys Thr Leu Glu Lys Glu
Pro Arg Thr Phe Lys Ala Lys Glu Leu Trp Glu Lys Asn Gly Ala
 Val Ile Met Ala Val Arg Arg Pro Gly Cys Phe Leu Cys Arg Glu
 Glu Ala Ala Asp Leu Ser Ser Leu Lys Ser Met Leu Asp Gln Leu
 Gly Val Pro Leu Tyr Ala Val Val Lys Glu His Ile Arg Thr Glu
                                     115
 Val Lys Asp Phe Gln Pro Tyr Phe Lys Gly Glu Ile Phe Leu Asp
 Glu Lys Lys Lys Phe Tyr Gly Pro Gln Arg Arg Lys Met Met Phe
                                                          150
 Met Gly Phe Ile Arg Leu Gly Val Trp Tyr Asn Phe Phe Arg Ala
                                      160
 Trp Asn Gly Gly Phe Ser Gly Asn Leu Glu Gly Glu Gly Phe Ile
                 170
 Leu Gly Gly Val Phe Val Val Gly Ser Gly Lys Gln Gly Ile Leu
 Leu Glu His Arg Glu Lys Glu Phe Gly Asp Lys Val Asn Leu Leu
 Ser Val Leu Glu Ala Ala Lys Met Ile Lys Pro Gln Thr Leu Ala
 Ser Glu Lys Lys
<210> 374
<211> 744
<212> DNA
<213> Homo sapiens
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<400> 374
acggaccgag ggttcgaggg agggacacgg accaggaacc tgagctaggt 50
caaagacgcc cgggccaggt gccccgtcgc aggtgcccct ggccggagat 100

<210> 375

<211> 123

<212> PRT

<213> Homo sapiens

<400> 375

Met Ala Asn Pro Gly Leu Gly Leu Leu Leu Ala Leu Gly Leu Pro 1 5 10

Phe Leu Leu Ala Arg Trp Gly Arg Ala Trp Gly Gln Ile Gln Thr 20 25 30

Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser 35 40 45

Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile 50 55 60

Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly 65 70 75

Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu 80 85 90

Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala 95 100 105

Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys 110 115 120

Leu Pro Ile

<210> 376

<211> 713

<212> DNA

<213> Homo sapiens

<400> 376 aatatatcat ctatttatca ttaatcaata atgtattctt ttattccaat 50 aacatttggg ttttgggatt ttaattttca aacacagcag aatgacattt 100 tttctqtcac tattattatt qttggtatgt gaagctattt ggagatccaa 150 ttcaggaagc aacacattgg agaatggcta ctttctatca agaaataaag 200 agaaccacag tcaacccaca caatcatctt tagaagacag tgtgactcct 250 accaaagctg tcaaaaccac aggcaagggc atagttaaag gacggaatct 300 tgactcaaga gggttaattc ttggtgctga agcctggggc aggggtgtaa 350 agaaaaacac ttagattcaa tgattgtaaa tttaaggcaa atacacatat 400 tagtattacc ttagtgtaat gtatccctgt catatataca ataaggtgaa 450 attataagta ccctatgcag ttggctggac agttctaaat tggactttat 500 taatttttaa aatcagtaac tgatttatca ctggctatgt gcttagatct 550 acaggagatc atataatttg atacaaataa aagaaaagtg ttctctcccc 600 ttacagaatt gacattttaa atgcgataca gttagaatag gaaatatgac 650 attagaaagg aagaatgaca gggagaaagg aaagaaggga aaatgttgcc 700 aaggaaaaaa aaa 713

<210> 377 <211> 90

<212> PRT

<213> Homo sapiens

<400> 377

Met Thr Phe Phe Leu Ser Leu Leu Leu Leu Val Cys Glu Ala 1 5 10 15

Ile Trp Arg Ser Asn Ser Gly Ser Asn Thr Leu Glu Asn Gly Tyr  $\phantom{0}20\phantom{0}$ 

Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr Gln Ser

Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr Thr 50 55 60

Gly Lys Gly Ile Val Lys Gly Arg Asn Leu Asp Ser Arg Gly Leu 65 70 75

Ile Leu Gly Ala Glu Ala Trp Gly Arg Gly Val Lys Lys Asn Thr 80 85 90

<210> 378

<211> 3265

<212> DNA

<213> Homo sapiens

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- Thr Tyr Leu Phe Glu Ala Thr Glu Lys Arg Phe Phe Lys Asn 65 70 75
- Val Ser Ile Leu Ile Pro Glu Asn Trp Lys Glu Asn Pro Gln Tyr 80 85 90
- Lys Arg Pro Lys His Glu Asn His Lys His Ala Asp Val Ile Val
- Ala Pro Pro Thr Leu Pro Gly Arg Asp Glu Pro Tyr Thr Lys Gln 110 115 120
- Phe Thr Glu Cys Gly Glu Lys Gly Glu Tyr Ile His Phe Thr Pro 125 130 135
- Asp Leu Leu Gly Lys Lys Gln Asn Glu Tyr Gly Pro Pro Gly 140 145
- Lys Leu Phe Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe 155 160 165
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- Lys Ile Glu Ala Thr Arg Cys Ser Ala Gly Ile Ser Gly Arg Asn 185 190 195
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- Arg Ile Asp Ser Thr Thr Lys Leu Tyr Gly Lys Asp Cys Gln Phe 215 220 225
- Phe Pro Asp Lys Val Gln Thr Glu Lys Ala Ser Ile Met Phe Met 230 235 240
- Gln Ser Ile Asp Ser Val Val Glu Phe Cys Asn Glu Lys Thr His 245 250 255
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Lys	His	Phe	Leu	Leu 335	Gln	Thr	Val	Glu	Asn 340	Gly	Ser	Trp	Val	Gly 345
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Pro Arg Ala Asn Ser Pro Thr Gly Lys Glu Gly Tyr Gln Ala Val
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Leu Gl<br/>n Glu Trp Glu Glu Gln His Arg Asn Tyr Val Ser Ser Leu<br/>  $65 \hspace{1.5cm} 70 \hspace{1.5cm} 75$ 

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Ile Gly Gly Phe Asp Leu Asp Ile Lys Gly Trp Gly Glu Asp
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Arg Thr Pro Val Arg Gly Leu Phe His Leu Trp His Glu Lys Arg
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Cys Met Asp Glu Leu Thr Pro Glu Gln Tyr Lys Met Cys Met Gln
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Ser Lys Ala Met Asn Glu Ala Ser His Gly Gln Leu Gly Met Leu
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Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser 20 25 30

Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Ash 35 40 45

Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys 50 55 60

Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
65 70 75

Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro 80 . 85 90

Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile 95 100 105

Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp 110 115 120

Gln Thr Leu Glu Phe Leu Lys Ile Pro Ser Thr Leu Ala Pro Pro 125 130 135

Met Asp Pro Ser Val Pro Ile Trp Ile Ile Ile Phe Gly Val Ile 140 145 150

Phe Cys Ile Ile Ile Val Ala Ile Ala Leu Leu Ile Leu Ser Gly 155 160 165

Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro Ser Glu Val Asp 170 175 180

Asp Ala Glu Asp Lys Cys Glu Asn Met Ile Thr Ile Glu Asn Gly 185 190 195

Ile Pro Ser Asp Pro Leu Asp Met Lys Gly Gly Ile Leu Met Met 200 205 210

Pro Ser

<210> 388

<211> 1371

<212> DNA

<213> Homo sapiens

<400> 388

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<sup>&</sup>lt;211> 215

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 389

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Ile Gln Leu Thr Ala Leu Trp Pro Ile Ala Ala Val Glu Ile Tyr Thr Ser Arg Val Leu Glu Ala Val Asn Gly Thr Asp Ala Arg Leu Lys Cys Thr Phe Ser Ser Phe Ala Pro Val Gly Asp Ala Leu Thr Val Thr Trp Asn Phe Arg Pro Leu Asp Gly Gly Pro Glu Gln Phe Val Phe Tyr Tyr His Ile Asp Pro Phe Gln Pro Met Ser Gly Arg 85 Phe Lys Asp Arg Val Ser Trp Asp Gly Asn Pro Glu Arg Tyr Asp Ala Ser Ile Leu Leu Trp Lys Leu Gln Phe Asp Asp Asn Gly Thr 120 115 Tyr Thr Cys Gln Val Lys Asn Pro Pro Asp Val Asp Gly Val Ile Gly Glu Ile Arg Leu Ser Val Val His Thr Val Arg Phe Ser Glu Ile His Phe Leu Ala Leu Ala Ile Gly Ser Ala Cys Ala Leu Met 165 155 160 Ile Ile Ile Val Ile Val Val Leu Phe Gln His Tyr Arg Lys Lys Arg Trp Ala Glu Arg Ala His Lys Val Val Glu Ile Lys Ser 185 Lys Glu Glu Glu Arg Leu Asn Gln Glu Lys Lys Val Ser Val Tyr 210 Leu Glu Asp Thr Asp 215 <210> 390 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 390 ccgaggccat ctagaggcca gagc 24 <210> 391 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 391

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<211> 90
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<213> Homo sapiens
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 Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
 Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
                  50
                                                           60
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<210> 398
<211> 907
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<210> 399

<211> 120

<212> PRT

<213> Homo sapiens

<400> 399

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Asp Ala His Arg Leu Gln Pro Phe Val Thr Glu Arg Thr Leu Gly 35 40 45

Lys Val Gln Arg Trp Ser Gly Val His Thr Gln Thr Gly Gly Arg
50 55 60

Ala Gly Gly Gln Phe Cys Cys Ala Trp Leu Asp Ser Lys Arg
65 70 75

Val Leu Ala Ser Pro Gly Trp Gly Ala Ala Asn Ser Ile Lys Asn 80 85 90

Gln Arg Val Trp Ala Pro Ala Thr Glu Ser Ser Ala Gln Leu Leu 95 100 105

Cys Cys Trp Pro Val Gly Val Ala Arg Gly Gly Ala Leu Cys Gln
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<210> 400

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<213> Homo sapiens

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<210> 401

<211> 198

<212> PRT

<213> Homo sapiens

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Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala 20 25 30

Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu 35 40 45

Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu 50 55 60

Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu
65 70 75

Leu Leu Gly Gl<br/>n Glu Val Ser Arg Gly Arg Asp Ala Ala Gl<br/>n Glu 80 85 90

Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu 95 100 105

Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala 110 115 120

Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val 125 130 135

Gln Leu Arg Ser Ala Trp Leu Gly Pro Ala Tyr Arg Glu Phe Glu 140 145 150

Val Leu Lys Ala His Ala Asp Lys Gln Ser His Ile Leu Trp Ala 155 160 165

Leu Thr Gly His Val Gln Arg Gln Arg Glu Met Val Ala Gln 170 175 180

Gln His Arg Leu Arg Gln Ile Gln Glu Arg Leu His Thr Ala Ala

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<213> Homo sapiens

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<211> 206

<212> PRT

<213> Homo sapiens

<400> 403

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Ser His Thr Ser Arg Leu Lys Ala Arg Lys His Ser Lys Arg Arg 40 45

Val Arg Asp Lys Asp Gly Asp Leu Lys Thr Gln Ile Glu Lys Leu
50 55 60

Trp Thr Glu Val Asn Ala Leu Lys Glu Ile Gln Ala Leu Gln Thr 65 70 75

Val Cys Leu Arg Gly Thr Lys Val His Lys Lys Cys Tyr Leu Ala 80 85 90

Ser Glu Gly Leu Lys His Phe His Glu Ala Asn Glu Asp Cys Ile 95 100 105

Ser Lys Gly Gly Ile Leu Val Ile Pro Arg Asn Ser Asp Glu Ile 110 115 120

Asn Ala Leu Gln Asp Tyr Gly Lys Arg Ser Leu Pro Gly Val Asn 125 130 135

Asp Phe Trp Leu Gly Ile Asn Asp Met Val Thr Glu Gly Lys Phe 140 145 150

Val Asp Val Asn Gly Ile Ala Ile Ser Phe Leu Asn Trp Asp Arg

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<211> 104

<212> PRT

<213> Homo sapiens

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Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly
35 40 45

Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu Leu
50 55 60

Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser 65 70 75

Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val 80 85 90

Lys Ala Leu Lys Ala Leu Leu Gly Ala Leu Thr Val Phe Gly 95 100

<210> 409

<211> 2089

<212> DNA

<213> Homo sapiens

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PROPERTY OF THE PROPERTY OF

THE RESIDENCE

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His Val Leu Lys Leu Pro Tyr Gln Gly Asn Ala Thr Met Leu Val
Val Leu Met Glu Lys Met Gly Asp His Leu Ala Leu Glu Asp Tyr
Leu Thr Thr Asp Leu Val Glu Thr Trp Leu Arg Asn Met Lys Thr
                                     325
                                                         330
                320
Arg Asn Met Glu Val Phe Phe Pro Lys Phe Lys Leu Asp Gln Lys
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                                     340
Tyr Glu Met His Glu Leu Leu Arg Gln Met Gly Ile Arg Arg Ile
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Phe Ser Pro Phe Ala Asp Leu Ser Glu Leu Ser Ala Thr Gly Arg
Asn Leu Gln Val Ser Arg Val Leu Arg Arg Thr Val Ile Glu Val
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                                     385
Asp Glu Arg Gly Thr Glu Ala Val Ala Gly Ile Leu Ser Glu Ile
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Thr Ala Tyr Ser Met Pro Pro Val Ile Lys Val Asp Arg Pro Phe
His Phe Met Ile Tyr Glu Glu Thr Ser Gly Met Leu Leu Phe Leu
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<213> Homo sapiens

440

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aggggcccca tccttccagg caccaaggcc tggatggaga ccgaggacac 350

cctgggccgt gtcctgagtc ccgagcccga ccatgacagc ctgtaccacc 400

ctccgcctga ggaggaccag ggcgaggaga ggccccggtt gtggtgatg 450

ccaaatcacc aggtgctcc ggggccatca ctgccccgc cctgtcccaa 550

ggcccaggct gttgggactg ggacctccc taccctgccc cagctagaca 600

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<211> 151

<212> PRT

<213> Homo sapiens

## <400> 412

Met Arg Arg Leu Leu Val Thr Ser Leu Val Val Val Leu Leu 1 5 10 15

Trp Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met 20 25 30

Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
35 40 45

Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
50 55 60

Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu 65 70 75

Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys 80 85 90

Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro 95 100 105

Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp 110 115 120

Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln 125 130 135

Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro 140 145 150

Gln

<210> 413

<211> 1176

<212> DNA

<213> Homo sapiens

## <400> 413

agaaagctgc actctgttga gctccagggc gcagtggagg gagggagtga 50 aggaggctctc tgtacccaag gaaagtgcag ctgagactca gacaagatta 100 caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150 tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200 gtctccatct ctgcccagaa gctgcaagga aatcaaagac gaatgtccta 250 gtgcatttga tggcctgtat tttctccgca ctgagaatgg tgttatctac 300 cagaccttct gtgacatgac ctctggggt ggcggctgga ccctggtggc 350 cagcgtgcat gagaatgaca tgcgtggaa gtgcacggtg ggcgatcgct 400

ggtccagtca gcagggcagc aaagcagact acccagaggg ggacggcaac 450 tgggccaact acaacacett tggatetgca gaggeggcca cgagegatga 500 ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550 ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600 ctgaggtacc gcacggacac tggcttcctc cagacactgg gacataatct 650 gtttggcatc taccagaaat atccagtgaa atatggagaa ggaaagtgtt 700 ggactgacaa cggcccggtg atccctgtgg tctatgattt tggcgacgcc 750 cagaaaacag catcttatta ctcaccctat ggccagcggg aattcactgc 800 gggatttgtt cagttcaggg tatttaataa cgagagagca gccaacgcct 850 tgtgtgctgg aatgagggtc accggatgta acactgagca tcactgcatt 900 ggtggaggag gatactttcc agaggccagt ccccagcagt gtggagattt 950 ttctggtttt gattggagtg gatatggaac tcatgttggt tacagcagca 1000 gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050 tgtgggaggg aacccagacc tctcctccca accatgagat cccaaggatg 1100 gagaacaact tacccagtag ctagaatgtt aatggcagaa gagaaaacaa 1150 taaatcatat tgactcaaga aaaaaa 1176

<210> 414

<211> 313

<212> PRT

<213> Homo sapiens

<400> 414

Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg 1 5 10 15

Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr 20 25 30

Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys 35 40 45

Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr 50 55 60

Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly 65 70 75

Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met 80 85 90

Arg Gly Lys Cys Thr Val Gly Asp Arg Trp Ser Ser Gln Gln Gly 95 100 105

Ser Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn Trp Ala Asn Tyr 110 115 120

Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp Asp Tyr Lys

130 135 125 Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly Ile Trp 145 His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser Ser 165 155 Leu Leu Arg Tyr Arg Thr Asp Thr Gly Phe Leu Gln Thr Leu Gly 180 170 175 His Asn Leu Phe Gly Ile Tyr Gln Lys Tyr Pro Val Lys Tyr Gly 185 Glu Gly Lys Cys Trp Thr Asp Asn Gly Pro Val Ile Pro Val Val 200 205 Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro 225 Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val 230 Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 280 275 Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser 290 295 Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg

<210> 415

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 415
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cggctgggag cccacgaggc tgccgcatcc tgccctcgga acaatgggac 100

tcggcgcgcg aggtgcttgg gccgcgctgc tcctgggac gctgcaggtg 150

ctagcgctgc tgggggccgc ccatgaaagc gcagccatgg cggcatctgc 200

aaacatagag aattctgggc ttccacacaa ctccagtgct aactcaacag 250

agactctcca acatgtgcct tctgaccata caaatgaaac ttccaacagt 300

actgtgaaac caccaacttc agttgcctca gactccagta atacaacggt 350

caccaccatg aaacctacag cggcatctaa tacaacaaca ccagggatgg 400

tctcaacaaa tatgacttct accaccttaa agtctacacc caaaacaaca 450

agtgtttcac agaacacatc tcagatatca acatccacaa tgaccgtaac 500

ccacaatagt tcagtgacat ctgctgcttc atcagtaaca atcacaacaa 550 ctatgcattc tgaagcaaag aaaggatcaa aatttgatac tgggagcttt 600 gttggtggta ttgtattaac gctgggagtt ttatctattc tttacattgg 650 atgcaaaatg tattactcaa gaagaggcat tcggtatcga accatagatg 700 aacatqatqc catcatttaa ggaaatccat ggaccaagga tggaatacag 750 attgatgctg ccctatcaat taattttggt ttattaatag tttaaaaacaa 800 tattctcttt ttgaaaatag tataaacagg ccatgcatat aatgtacagt 850 gtattacgta aatatgtaaa gattcttcaa ggtaacaagg gtttgggttt 900 tgaaataaac atctggatct tatagaccgt tcatacaatg gttttagcaa 950 gttcatagta agacaaacaa gtcctatctt ttttttttgg ctggggtggg 1000 ggcattggtc acatatgacc agtaattgaa agacgtcatc actgaaagac 1050 agaatgccat ctgggcatac aaataagaag tttgtcacag cactcaggat 1100 tttgggtatc ttttgtagct cacataaaga acttcagtgc ttttcagagc 1150 tggatatatc ttaattacta atgccacaca gaaattatac aatcaaacta 1200 gatctgaagc ataatttaag aaaaacatca acattttttg tgctttaaac 1250 tgtagtagtt ggtctagaaa caaaatactc c 1281

<210> 416

<211> 208

<212> PRT

<213> Homo sapiens

<400> 416

Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Gly 1 5 10 15

Thr Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala 20 25 30

Ala Met Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His 35 40 45

Asn Ser Ser Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser 50 55 60

Asp His Thr Asn Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr 65 70 75

Ser Val Ala Ser Asp Ser Ser Asn Thr Thr Val Thr Thr Met Lys 80 85 90

Pro Thr Ala Ala Ser Asn Thr Thr Thr Pro Gly Met Val Ser Thr 95  $\phantom{\bigg|}100\phantom{\bigg|}$  105

Asn Met Thr Ser Thr Thr Leu Lys Ser Thr Pro Lys Thr Thr Ser 110 115 120

Val Ser Gln Asn Thr Ser Gln Ile Ser Thr Ser Thr Met Thr Val

Thr His Asn Ser Ser Val Thr Ser Ala Ala Ser Ser Val Thr Ile 150

Thr Thr Thr Met His Ser Glu Ala Lys Lys Gly Ser Lys Phe Asp 165

Thr Gly Ser Phe Val Gly Gly Ile Val Leu 175

Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr 190

Thr Arg Thr Arg Thr Ile Asp Glu His Asp Asp Ala Ile Ile Ile

<210> 417 <211> 1728 <212> DNA <213> Homo sapiens

<213> Homo sapiens

<400> 417 cageegggte ceaageetgt geetgageet gageetgage etgageeega 50 geegggagee ggtegegggg geteeggget gtgggaeege tgggeeecea 100 gcgatggcga ccctgtgggg aggccttctt cggcttggct ccttgctcag 150 cctgtcgtgc ctggcgcttt ccgtgctgct gctggcgcag ctgtcagacg 200 ccgccaagaa tttcgaggat gtcagatgta aatgtatctg ccctccctat 250 aaagaaaatt ctgggcatat ttataataag aacatatctc agaaagattg 300 tgattgcctt catgttgtgg agcccatgcc tgtgcggggg cctgatgtag 350 aagcatactg tctacgctgt gaatgcaaat atgaagaaag aagctctgtc 400 acaatcaagg ttaccattat aatttatctc tccattttgg gccttctact 450 tctgtacatg gtatatctta ctctggttga gcccatactg aagaggcgcc 500 tctttggaca tgcacagttg atacagagtg atgatgatat tggggatcac 550 cagcettttg caaatgeaca egatgtgeta geeegeteee geagtegage 600 caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650 tccaagagca gcgaaagtct gtctttgacc ggcatgttgt cctcagctaa 700 ttgggaattg aattcaaggt gactagaaag aaacaggcag acaactggaa 750 agaactgact gggttttgct gggtttcatt ttaatacctt gttgatttca 800 ccaactgttg ctggaagatt caaaactgga agcaaaaact tgcttgattt 850 ttttttcttg ttaacgtaat aatagagaca tttttaaaag cacacagctc 900 aaagtcagcc aataagtctt ttcctatttg tgacttttac taataaaaat 950 aaatctgcct gtaaattatc ttgaagtcct ttacctggaa caagcactct 1000 <210> 418

<211> 198

<212> PRT

<213> Homo sapiens

<400> 418

Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu 1 5 10

Ser Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Ala Gln Leu
20 25 30

Ser Asp Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile 35 40 45

Cys Pro Pro Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn 50 55

Ile Ser Gln Lys Asp Cys Asp Cys Leu His Val Val Glu Pro Met  $\phantom{0}65\phantom{0}$  70  $\phantom{0}75\phantom{0}$ 

Pro Val Arg Gly Pro Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu 80 85 90

Cys Lys Tyr Glu Glu Arg Ser Ser Val Thr Ile Lys Val Thr Ile 95 100 105

Ile Ile Tyr Leu Ser Ile Leu Gly Leu Leu Leu Leu Tyr Met Val 110 115 120

Tyr Leu Thr Leu Val Glu Pro Ile Leu Lys Arg Arg Leu Phe Gly
125 130 135

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His Ala Gln Leu Ile Gln Ser Asp Asp Ile Gly Asp His Gln
140 145 150
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Pro Phe Ala Asn Ala His Asp Val Leu Ala Arg Ser Arg Ser Arg 155 160 165

Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln Gln Arg Trp Lys 170 175 180

Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe Asp Arg His Val 185 190 195

Val Leu Ser

<210> 419

<211> 681

<212> DNA

<213> Homo sapiens

<400> 419

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tegetetgge ttetgggett gteetggete tgtegetget getgeecaag 100
geetteetgt eeegegggaa geggeaggag eegeegeega eacetgaagg 150
aaaattggge egattteeac etatgatgea teateaceag geaceeteag 200
atggeeagae teetgggget egttteeaga ggteteacet tgeegaggea 250
tttgeaaagg eeaaaggate aggtggaggt getggaggag gaggtagtgg 300
aagaggtetg atggggeaga ttatteeaat etaeggtttt gggattttt 350
tatatataet gtacatteta tttaaggtaa gtagaateat eetaeateata 400
ttacateaat gaaaatetaa tatggegata aaaateattg tetaeattaa 450
aacttettat agtteataaa attatteaa ateeateate tetttaaate 500
ctgeeteete tteatgaggt acttaggata gecattatt eagtteeaca 550
taagaatgtt taeteaatgt ttaagtgtt tgeeceaaa tteaeacta 600
acaaggeaga actaggaett gaacatggat etittggtte ttaateeag 650
gagtgataea atteaatgea eteeeetgee a 681

<210> 420

<211> 128

<212> PRT

<213> Homo sapiens

<400> 420

Met Ala Tyr Ser Thr Val Gln Arg Val Ala Leu Ala Ser Gly Leu 1 5 10 15

Val Leu Ala Leu Ser Leu Leu Pro Lys Ala Phe Leu Ser Arg 20 25 30

Gly Lys Arg Gln Glu Pro Pro Pro Thr Pro Glu Gly Lys Leu Gly 35 40 45

```
Arg Phe Pro Pro Met Met His His His Gln Ala Pro Ser Asp Gly 60 Gln Thr Pro Gly Ala Arg Phe Gln Arg Ser His Leu Ala Glu Ala 75 Phe Ala Lys Ala Lys Gly Ser Gly Gly Gly 85 Ala Gly Gly Gly 90 Ser Gly Arg Gly Leu Met Gly Gln Ile Ile Phe Leu Tyr Ile Leu Tyr Ile Leu Phe Lys Val Ser Arg 120 Ile Ile Leu Ile Ile Leu His Gln
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<210> 421 <211> 1630 <212> DNA

<213> Homo sapiens

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<210> 422

<211> 394

<212> PRT

<213> Homo sapiens

<400> 422

Met Phe Cys Pro Leu Lys Leu Ile Leu Leu Pro Val Leu Leu Asp 1 5 10 15

Tyr Ser Leu Gly Leu Asn Asp Leu Asn Val Ser Pro Pro Glu Leu 20 25 30

Thr Val His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln 35 40

Ser Thr Glu Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser 50 60

Pro Gly Glu His Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Tyr Ser 65 70 75

Asn Leu Ser Val Pro Ile Gly Arg Phe Gln Asn Arg Val His Leu 80 85 90

Met Gly Asp Ile Leu Cys Asn Asp Gly Ser Leu Leu Gln Asp 95 100 105

Val Gln Glu Ala Asp Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu 110 115 120

Lys Gly Glu Ser Gln Val Phe Lys Lys Ala Val Val Leu His Val 125 130 135

Leu Pro Glu Glu Pro Lys Glu Leu Met Val His Val Gly Gly Leu
140 145 150

Ile Gln Met Gly Cys Val Phe Gln Ser Thr Glu Val Lys His Val

	155	160	-	165
Thr Lys Val Glu	Trp Ile Phe 170	Ser Gly Arg Arg 175		Glu 180
Ile Val Phe Arg	Tyr Tyr His 185	Lys Leu Arg Met 190		Tyr 195
Ser Gln Ser Trp	Gly His Phe 200	Gln Asn Arg Val 205		Gly 210
Asp Ile Phe Arg	Asn Asp Gly 215	Ser Ile Met Leu 220	ı Gln Gly Val i	Arg 225
Glu Ser Asp Gly	Gly Asn Tyr 230	Thr Cys Ser Ile 235	e His Leu Gly A	Asn 240
Leu Val Phe Lys	Lys Thr Ile 245	Val Leu His Val 250	l Ser Pro Glu (	Glu 255
Pro Arg Thr Leu	Val Thr Pro 260	Ala Ala Leu Aro 265		Leu 270
Gly Gly Asn Gln	Leu Val Ile 275	Ile Val Gly Ile 280	e Val Cys Ala '	Thr 285
Ile Leu Leu Leu	Pro Val Leu 290	Ile Leu Ile Val 295		Cys 300
Gly Asn Lys Ser	Ser Val Asn 305	Ser Thr Val Let 310	ı Val Lys Asn '	Thr 315
Lys Lys Thr Asr	Pro Glu Ile 320	Lys Glu Lys Pro 325		Glu 330
Arg Cys Glu Gl	Glu Lys His 335	Ile Tyr Ser Pro	o Ile Ile Val	Arg 345
Glu Val Ile Glu	ı Glu Glu Glu 350	Pro Ser Glu Ly: 355	s Ser Glu Ala	Thr 360
Tyr Met Thr Met	His Pro Val 365	Trp Pro Ser Le 370	u Arg Ser Asp	Arg 375
Asn Asn Ser Leu	ı Glu Lys Lys 380	Ser Gly Gly Gl 385	y Met Pro Lys	Thr 390
Gln Gln Ala Phe	2			

<210> 423

<211> 963

<212> DNA

<213> Homo sapiens

<400> 423

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acatcacctt aaatattaaa actcggaaac cagctctcgt ctccgttggc 250 cctgcatcct cctcctggtg gcgtgtgatg gctttgattc tgctgatcct 300 gtgcgtgggg atggttgtcg ggctggtggc tctgggggatt tggtctgtca 350 tgcagcgcaa ttacctacaa gatgagaatg aaaatcgcac aggaactctg 400 caacaattag caaagcgctt ctgtcaatat gtggtaaaac aatcagaact 450 aaagggcact ttcaaaggtc ataaatgcag cccctgtgac acaaactgga 500 gatattatgg agatagctgc tatgggttct tcaggcacaa cttaacatgg 550 gaagagagta agcagtactg cactgacatg aatgctactc tcctgaagat 600 tgacaaccgg aacattgtgg agtacatcaa agccaggact catttaattc 650 gttgggtcgg attatctcgc cagaagtcga atgaggtctg gaagtgggag 700 gatggctcgg ttatctcaga aaatatgttt gagtttttgg aagatggaaa 750 aggaaatatg aattgtgctt attttcataa tgggaaaatg caccctacct 800 tctgtgagaa caaacattat ttaatgtgtg agaggaaggc tggcatgacc 850 aaggtggacc aactacctta atgcaaagag gtggacagga taacacagat 900 aagggcttta ttgtacaata aaagatatgt atgaatgcat cagtagctga 950 aaaaaaaaa aaa 963

<210> 424 <211> 229 <212> PRT

<213> Homo sapiens

<400> 424<br/>Met Gln Asp Glu Asp Glu Ser Gly Tyr Ile Thr Leu Asn Ile Lys Thr Arg 15Lys Pro Ala Leu Val 20Ser Val Gly Pro Ala Ser Ser Ser Ser Trp Trp 30Arg Val Met Ala Leu 35Ile Leu Leu Ile Leu Cys Val Gly Met Val 45Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn 60Tyr Leu Gln Asp Glu Asn Glu Asn Arg Thr 70Gly Thr Leu Gln Gln 75Leu Ala Lys Arg Phe 80Cys Gln Tyr Val Val Val Lys Gln Ser Glu Leu 90Lys Gly Thr Phe Lys 95Gly His Lys Cys Ser Pro Cys Asp Thr Asn 105Trp Arg Tyr Tyr Gly Asp Ser Cys Tyr Gly Phe Phe Arg His Asn 120Leu Thr Trp Glu Glu Ser Lys Gln Tyr Cys Thr Asp Met Asn Ala

	125				130					135	
Thr Leu Leu Lys	Ile Asp 140	Asn :	Arg	Asn	Ile 145	Val	Glu	Tyr	Ile	Lys 150	
Ala Arg Thr His	Leu Ile 155	Arg	Trp	Val	Gly 160	Leu	Ser	Arg	Gln	Lys 165	
Ser Asn Glu Val	Trp Lys	Trp	Glu	Asp	Gly 175	Ser	Val	Ile	Ser	Glu 180	
Asn Met Phe Glu	Phe Leu 185	Glu	Asp	Gly	Lys 190	Gly	Asn	Met	Asn	Cys 195	
Ala Tyr Phe His	Asn Gly 200	Lys	Met	His	Pro 205	Thr	Phe	Cys	Glu	Asn 210	
Lys His Tyr Leu	Met Cys 215	Glu	Arg	Lys	Ala 220	Gly	Met	Thr	Lys	Val 225	
Asp Gln Leu Pro											
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<220> <223> Synthetic oligonucleotide probe											
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<400> 426 ctgagataac cgagccatcc tcccac 26											
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<210> 428 <211> 21 <212> DNA <213> Artificia	l Sequen	ce									
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<210> 429
<211> 17
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<400> 429
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<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 430
caaaaagcct ggaagtcttc aaag 24
<210> 431
<211> 20
<212> DNA
<213> Artificial Sequence
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<400> 431
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<210> 432
<211> 22
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 432
 cagtgagcac agcaagtgtc ct 22
<210> 433
<211> 28
<212> DNA
<213> Artificial Sequence
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<400> 433
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<210> 434
<211> 24
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 ctgaagacga cgcggattac ta 22
<210> 438
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<210> 439
<211> 30
<212> DNA
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<400> 439
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<211> 22

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<400> 450
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<400> 452
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cacagcatat tcagatgact aaatcca 27
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<400> 455
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<210> 456
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  <400> 466
  actetetgea ecceacagte accaetatet e 31
  <210> 467
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<400> 470
gggtggaggc tcactgagta ga 22
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<210> 472
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<400> 472
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<400> 478
tagacaggga ccatggcccg ca 22
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<210> 480
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gtcccttcac tgtttagagc atga 24
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<211> 26
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<400> 484
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<210> 487
<211> 23
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<400> 491
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 cagecegege gggageegga eegeegeegg aggagetegg aeggeatget 150
 qaqcccctc ctttqctqaa qcccqaqtqc qqaqaagccc gggcaaacgc 200
 aggctaagga gaccaaagcg gcgaagtcgc gagacagcgg acaagcagcg 250
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 cgtcagaaga ggcaageceg egagegegag aaatecaaeg cetgcaagtg 400
 tgtcagcagc cccagcaaag gcaagaccag ctgcgacaaa aacaagttaa 450
 atgtcttttc ccgggtcaaa ctcttcggct ccaagaagag gcgcagaaga 500
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 tgagggatac ttgtacacct cggaactttt cacacctgag tgcaaattca 750
 aagaatcagt gtttgaaaat tattatgtga catattcatc aatgatatac 800
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 agagatcatg aaaggcaacc atgtgaagaa gaacaagcct gcagctcatt 900
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<213> Homo Sapien

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Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser 230 235 240

His Asn Glu Ser Thr 245

<210> 496 <211> 1471

<212> DNA

<213> Homo Sapien

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<211> 225

<212> PRT

<213> Homo Sapien

<400> 497

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Arg Glu Pro Gly Gly Ser Arg Pro Val Ser Ala Gln Arg Arg Val
20 25 30

Cys Pro Arg Gly Thr Lys Ser Leu Cys Gln Lys Gln Leu Leu Ile 35 40 45

Leu Leu Ser Lys Val Arg Leu Cys Gly Gly Arg Pro Ala Arg Pro 50 55 60

Asp Arg Gly Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu 65 70 75

Phe Cys Arg Gln Gly Phe Tyr Leu Gln Ala Asn Pro Asp Gly Ser 80 85 90

Ile Gln Gly Thr Pro Glu Asp Thr Ser Ser Phe Thr His Phe Asn 95 100 105

Leu Ile Pro Val Gly Leu Arg Val Val Thr Ile Gln Ser Ala Lys 110 115

Leu Gly His Tyr Met Ala Met Asn Ala Glu Gly Leu Leu Tyr Ser 125 130 135

Ser Pro His Phe Thr Ala Glu Cys Arg Phe Lys Glu Cys Val Phe 140 145 150

Glu Asn Tyr Tyr Val Leu Tyr Ala Ser Ala Leu Tyr Arg Gln Arg 155 160

Arg Ser Gly Arg Ala Trp Tyr Leu Gly Leu Asp Lys Glu Gly Gln 170 175

Val Met Lys Gly Asn Arg Val Lys Lys Thr Lys Ala Ala Ala His 185 190 195

Phe Leu Pro Lys Leu Leu Glu Val Ala Met Tyr Gln Glu Pro Ser 200 205 210

Leu His Ser Val Pro Glu Ala Ser Pro Ser Ser Pro Pro Ala Pro 215 220 225

<210> 498 <211> 744

<212> DNA <213> Homo Sapien

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<210> 499

<211> 247

<212> PRT

<213> Homo Sapien

<400> 499

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Ala Arg Glu Gln His Trp Asp Arg Pro Ser Ala Ser Arg Arg 20 25 30

Ser Ser Pro Ser Lys Asn Arg Gly Leu Cys Asn Gly Asn Leu Val 35 40 45

Asp Ile Phe Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg 50 55 60

Leu Arg Arg Gln Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu
65 70 75

Tyr Cys Arg Gln Gly Tyr Tyr Leu Gln Met His Pro Asp Gly Ala 80 85 90

Leu Asp Gly Thr Lys Asp Asp Ser Thr Asn Ser Thr Leu Phe Asn 95 100 105

Leu Ile Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Lys 110 115

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ThrGlyLeuTyrLleeAlaMetAsnGlyGluGlyTyrLeuTyrPro<br/>135SerGluLeuPheThr<br/>140ProGluCysLysPhe<br/>145LysGluSerValPhe<br/>155GluAsnTyrTyrValTyrSerSerMet<br/>160LeuTyrArgGluGluGluSerGlyArgAlaTrpPheLeuGlyLeuAsnLysGluGluAlaMetLysGlyAsnLysProAlaAlaProArgAlaProAlaPheLeuProLysCluSerAlaAlaMet<br/>230TyrArgGluProSerSerLysSerThrSerAlaSerAlaIleProAsnGlyLysPro240ValAsnLysSerAlaSerAlaIleProAsnGlyLysPro240ValAsnLysSerAlaSerAlaIleProAsnGlyLysIleProValAsnLysSerAlaThrThrLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLysLys<
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<213> Homo Sapien

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Tyr Ala Phe Asn Arg Ile Pro Ser Leu Arg Arg Leu Asp Leu Gly 175 Glu Leu Lys Arg Leu Ser Tyr Ile Ser Glu Gly Ala Phe Glu Gly Leu Ser Asn Leu Arg Tyr Leu Asn Leu Ala Met Cys Asn Leu Arg 210 205 Glu Ile Pro Asn Leu Thr Pro Leu Ile Lys Leu Asp Glu Leu Asp 215 Leu Ser Gly Asn His Leu Ser Ala Ile Arg Pro Gly Ser Phe Gln Gly Leu Met His Leu Gln Lys Leu Trp Met Ile Gln Ser Gln Ile 250 245 Gln Val Ile Glu Arg Asn Ala Phe Asp Asn Leu Gln Ser Leu Val 270 265 Glu Ile Asn Leu Ala His Asn Asn Leu Thr Leu Leu Pro His Asp 275 Leu Phe Thr Pro Leu His His Leu Glu Arg Ile His Leu His His 295 Asn Pro Trp Asn Cys Asn Cys Asp Ile Leu Trp Leu Ser Trp Trp 315 310 Ile Lys Asp Met Ala Pro Ser Asn Thr Ala Cys Cys Ala Arg Cys 325 320 Asn Thr Pro Pro Asn Leu Lys Gly Arg Tyr Ile Gly Glu Leu Asp Gln Asn Tyr Phe Thr Cys Tyr Ala Pro Val Ile Val Glu Pro Pro 355 Ala Asp Leu Asn Val Thr Glu Gly Met Ala Ala Glu Leu Lys Cys 365 Arg Ala Ser Thr Ser Leu Thr Ser Val Ser Trp Ile Thr Pro Asn Gly Thr Val Met Thr His Gly Ala Tyr Lys Val Arg Ile Ala Val 400 Leu Ser Asp Gly Thr Leu Asn Phe Thr Asn Val Thr Val Gln Asp Thr Gly Met Tyr Thr Cys Met Val Ser Asn Ser Val Gly Asn Thr 430 Thr Ala Ser Ala Thr Leu Asn Val Thr Ala Ala Thr Thr Thr Pro 445 Phe Ser Tyr Phe Ser Thr Val Thr Val Glu Thr Met Glu Pro Ser Gln Asp Glu Ala Arg Thr Thr Asp Asn Asn Val Gly Pro Thr Pro 475 470

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Val Val Asp Trp Glu Thr Thr Asn Val Thr Thr Ser Leu Thr Pro
Gln Ser Thr Arg Ser Thr Glu Lys Thr Phe Thr Ile Pro Val Thr
Asp Ile Asn Ser Gly Ile Pro Gly Ile Asp Glu Val Met Lys Thr
                                                         525
                515
Thr Lys Ile Ile Gly Cys Phe Val Ala Ile Thr Leu Met Ala
                530
                                    535
Ala Val Met Leu Val Ile Phe Tyr Lys Met Arg Lys Gln His His
                545
Arg Gln Asn His His Ala Pro Thr Arg Thr Val Glu Ile Ile Asn
Val Asp Asp Glu Ile Thr Gly Asp Thr Pro Met Glu Ser His Leu
                                                         585
                575
Pro Met Pro Ala Ile Glu His Glu His Leu Asn His Tyr Asn Ser
                590
Tyr Lys Ser Pro Phe Asn His Thr Thr Thr Val Asn Thr Ile Asn
Ser Ile His Ser Ser Val His Glu Pro Leu Leu Ile Arg Met Asn
Ser Lys Asp Asn Val Gln Glu Thr Gln Ile
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<213> Homo Sapien

<400> 502
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ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250

ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300

caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350

cgataatgaa gggaaccaaa aagtggtgat cacttactcc agtcgtcatg 400

tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450

aatttcctgg caggagatgc ctccttgcag attgaacctc tgaagcccag 500

tgatgagggc cggtacacct gtaaggttaa gaactacga gcccaagtgt 550

ggagccatgt catcttaaaa gtcttagtag gaccatccaa gcccaagtgt 600

gagttggaag gagagctgac agaaggaagt gacctgactt tgcagtgtga 650 gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700 agaaagaggg agaggatgaa cgtctgcctc ccaaatctag gattgactac 750 aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800 actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850 tgcgagtaac tgtacagtat gtacaaagca tcggcatggt tgcaggagca 900 gtgacaggca tagtggctgg agccctgctg attttcctct tggtgtggct 950 gctaatccga aggaaagaca aagaaagata tgaggaagaa gagagaccta 1000 atgaaattcg agaagatgct gaagctccaa aagcccgtct tgtgaaaccc 1050 agetectett ceteaggete teggagetea egetetggtt ettecteeae 1100 tcgctccaca gcaaatagtg cctcacgcag ccagcggaca ctgtcaactg 1150 acgcagcacc ccagccaggg ctggccaccc aggcatacag cctagtgggg 1200 ccagaggtga gaggttctga accaaagaaa gtccaccatg ctaatctgac 1250 caaagcagaa accacacca gcatgatccc cagccagagc agagccttcc 1300 aaacggtctg aattacaatg gacttgactc ccacgctttc ctaggagtca 1350 gggtctttgg actcttctcg tcattggagc tcaagtcacc agccacacaa 1400 ccagatgaga ggtcatctaa gtagcagtga gcattgcacg gaacagattc 1450 agatgagcat tttccttata caataccaaa caagcaaaag gatgtaagct 1500 gattcatctg taaaaaggca tcttattgtg cctttagacc agagtaaggg 1550 aaagcaggag tccaaatcta tttgttgacc aggacctgtg gtgagaaggt 1600 tggggaaagg tgaggtgaat atacctaaaa cttttaatgt gggatatttt 1650 gtatcagtgc tttgattcac aattttcaag aggaaatggg atgctgtttg 1700 taaattttct atgcatttct gcaaacttat tggattatta gttattcaga 1750 cagtcaagca gaacccacag cettattaca eetgtetaca eeatgtaetg 1800 agctaaccac ttctaagaaa ctccaaaaaa ggaaacatgt gtcttctatt 1850 ctgacttaac ttcatttgtc ataaggtttg gatattaatt tcaaggggag 1900 ttgaaatagt gggagatgga gaagagtgaa tgagtttctc ccactctata 1950 ctaatctcac tatttgtatt gagcccaaaa taactatgaa aggagacaaa 2000 aatttgtgac aaaggattgt gaagagcttt ccatcttcat gatgttatga 2050 ggattgttga caaacattag aaatatataa tggagcaatt gtggatttcc 2100 cctcaaatca gatgcctcta aggactttcc tgctagatat ttctggaagg 2150 agaaaataca acatgtcatt tatcaacgtc cttagaaaga attcttctag 2200

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<210> 503

<211> 373

<212> PRT

<213> Homo Sapien

<400> 503

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Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln 50 55 60

Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu 65 70 75

Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu 80 85 90

Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp 95 100 105

Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val 110 115 120

Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro 125 130 135

Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr 140  $\phantom{0}$  145  $\phantom{0}$  150

Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr 155 160 165

Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro 170 175 180

Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu 185 190 195

Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala 200 205 210

Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val 215 220 225

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Gln Tyr Val Gln Ser Ile Gly Met Val Ala Gly Ala Val Thr Gly
Ile Val Ala Gly Ala Leu Leu Ile Phe Leu Leu Val Trp Leu Leu
Ile Arg Arg Lys Asp Lys Glu Arg Tyr Glu Glu Glu Arg Pro
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Asn Glu Ile Arg Glu Asp Ala Glu Ala Pro Lys Ala Arg Leu Val
Lys Pro Ser Ser Ser Ser Gly Ser Arg Ser Ser Ser Gly
                290
Ser Ser Ser Thr Arg Ser Thr Ala Asn Ser Ala Ser Arg Ser Gln
                                                        315
                305
Arg Thr Leu Ser Thr Asp Ala Ala Pro Gln Pro Gly Leu Ala Thr
Gln Ala Tyr Ser Leu Val Gly Pro Glu Val Arg Gly Ser Glu Pro
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Lys Lys Val His His Ala Asn Leu Thr Lys Ala Glu Thr Thr Pro
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<210> 504

<211> 3060

<212> DNA

<213> Homo Sapien

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tgaagagatg attgaaaaag ccaaagggga aactgcctat ctgccatgca 200
aatttacgct tagtcccgaa gaccagggac cgctggacat cgagtggctg 250
ataccaccag ctgataatca gaaggtggat caagtgatta ttttatattc 300
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attttacgag taatgatctc aaatctggtg atgcatcaat aaatgtaacg 400
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acatacagct gtacagtcag aaacagagtg ggctctgatc agtgcctgtt 750 gcgtctaaac gttgtccctc cttcaaataa agctggacta attgcaggag 800 ccattatagg aactttgctt gctctagcgc tcattggtct tatcatcttt 850 tgctgtcgta aaaagcgcag agaagaaaaa tatgaaaagg aagttcatca 900 cgatatcagg gaagatgtgc cacctccaaa gagccgtacg tccactgcca 950 gaagctacat cggcagtaat cattcatccc tggggtccat gtctccttcc 1000 aacatggaag gatattccaa gactcagtat aaccaagtac caagtgaaga 1050 ctttgaacgc actcctcaga gtccgactct cccacctgct aagttcaagt 1100 accettacaa gactgatgga attacagttg tataaatatg gactactgaa 1150 gaatctgaag tattgtatta tttgacttta ttttaggcct ctagtaaaga 1200 cttaaatgtt ttttaaaaaa agcacaaggc acagagatta gagcagctgt 1250 aagaacacat ctactttatg caatggcatt agacatgtaa gtcagatgtc 1300 atgtcaaaat tagtacgagc caaattcttt gttaaaaaac cctatgtata 1350 gtgacactga tagttaaaag atgttttatt atattttcaa taactaccac 1400 taacaaattt ttaacttttc atatgcatat tctgatatgt ggtcttttag 1450 gaaaagtatg gttaatagtt gatttttcaa aggaaatttt aaaattctta 1500 cgttctgttt aatgtttttg ctatttagtt aaatacattg aagggaaata 1550 cccgttcttt tcccctttta tgcacacaac agaaacacgc gttgtcatgc 1600 ctcaaactat tttttatttg caactacatg atttcacaca attctcttaa 1650 acaacgacat aaaatagatt toottgtata taaataactt acatacgctc 1700 cataaagtaa attctcaaag gtgctagaac aaatcgtcca cttctacagt 1750 gttctcgtat ccaacagagt tgatgcacaa tatataaata ctcaagtcca 1800 atattaaaaa cttaggcact tgactaactt taataaaatt tctcaaacta 1850 tatcaatatc taaagtgcat atatttttta agaaagatta ttctcaataa 1900 cttctataaa aataagtttg atggtttggc ccatctaact tcactactat 1950 tagtaagaac ttttaacttt taatgtgtag taaggtttat tctacctttt 2000 tctcaacatg acaccaacac aatcaaaaac gaagttagtg aggtgctaac 2050 atgtgaggat taatccagtg attccggtca caatgcattc caggaggagg 2100 tacccatgtc actggaattg ggcgatatgg tttattttt cttccctgat 2150 ttggataacc aaatggaaca ggaggaggat agtgattctg atggccattc 2200 cctcgataca ttcctggctt ttttctgggc aaagggtgcc acattggaag 2250 aggtggaaat ataagttctg aaatctgtag ggaagagaac acattaagtt 2300

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<210> 505 <211> 352 <212> PRT

<213> Homo Sapien

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<211> 1705

<212> DNA

<213> Homo Sapien

<400> 506

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<sup>&</sup>lt;210> 507

<sup>&</sup>lt;211> 206

<sup>&</sup>lt;212> PRT

## <213> Homo Sapien

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<210> 508

<211> 924

<212> DNA

<213> Homo Sapien

<400> 508

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<210> 509 <211> 177

<212> PRT

<213> Homo Sapien

<400> 509

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Ile Leu Cys Ser Val Asp Asn His Gly Leu Arg Arg Cys Leu Ile 20 25 30

Ser Thr Asp Met His His Ile Glu Glu Ser Phe Gln Glu Ile Lys 35 40 45

Arg Ala Ile Gln Ala Lys Asp Thr Phe Pro Asn Val Thr Ile Leu
50 55 60

Ser Thr Leu Glu Thr Leu Gln Ile Ile Lys Pro Leu Asp Val Cys 65 70 75

Cys Val Thr Lys Asn Leu Leu Ala Phe Tyr Val Asp Arg Val Phe 80 85 90

Lys Asp His Gln Glu Pro Asn Pro Lys Ile Leu Arg Lys Ile Ser 95 100 105

Ser Ile Ala Asn Ser Phe Leu Tyr Met Gln Lys Thr Leu Arg Gln 110 115 120

Cys Gln Glu Gln Arg Gln Cys His Cys Arg Gln Glu Ala Thr Asn 125 130 135

Ala Thr Arg Val Ile His Asp Asn Tyr Asp Gln Leu Glu Val His  $140 \,$   $145 \,$   $150 \,$ 

Ala Ala Ile Lys Ser Leu Gly Glu Leu Asp Val Phe Leu Ala

165

155

- <210> 510
- <211> 996
- <212> DNA
- <213> Homo Sapien
- <400> 510

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- <211> 251
- <212> PRT
- <213> Homo Sapien
- <400> 511

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<210> 512

<211> 2015

<212> DNA

<213> Homo Sapien

<400> 512

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ctgctgggag gttggggtct ctgggagctc tgcaggcccc agcacccgca 150
gagcagacac tgcgatgaca acggacgaca cagaagtgcc cgctatgact 200
ctagcaccgg gccacgccgc tctggaaact caaacgctga gcgctgagac 250
ctcttctagg gcctcaaccc cagccggccc cattccagaa gcagagacca 300

ggggagccaa gagaatttcc cctgcaagag agaccaggag tttcacaaaa 350 acatetecea aetteatggt getgategee aceteegtgg agacateage 400 cqccagtggc agccccgagg gagctggaat gaccacagtt cagaccatca 450 caggcagtga tcccgaggaa gccatctttg acaccctttg caccgatgac 500 agctctgaag aggcaaagac actcacaatg gacatattga cattggctca 550 cacctccaca gaagctaagg gcctgtcctc agagagcagt gcctcttccg 600 acggccccca tccagtcatc accccgtcac gggcctcaga gagcagcgcc 650 tettecgacg geocecatee agteateace cegteaeggg ceteagagag 700 cagegeetet teegaeggee eccatecagt cateaceeg teatggteee 750 cgggatctga tgtcactctc ctcgctgaag ccctggtgac tgtcacaaac 800 atcgaggtta ttaattgcag catcacagaa atagaaacaa caacttccag 850 catccctggg gcctcagaca tagatctcat ccccacggaa ggggtgaagg 900 cctcgtccac ctccgatcca ccagctctgc ctgactccac tgaagcaaaa 950 ccacacatca ctgaggtcac agectctgcc gagaccctgt ccacagccgg 1000 caccacagag teagetgeae etcatgeeae ggttgggace ceaeteecea 1050 ctaacagcgc cacagaaaga gaagtgacag cacccggggc cacgaccctc 1100 agtqqaqctc tggtcacagt tagcaggaat cccctggaag aaacctcagc 1150 cctctctgtt gagacaccaa gttacgtcaa agtctcagga gcagctccgg 1200 tctccataqa qqctqqqtca qcaqtqqqca aaacaacttc ctttqctqqq 1250 agetetgett cetectacag ecceteggaa geegeeetea agaaetteae 1300 cccttcagag acaccgacca tggacatcgc aaccaagggg cccttcccca 1350 ccagcaggga ccctcttcct tctgtccctc cgactacaac caacagcagc 1400 cqaqqqacqa acaqcacctt agccaagatc acaacctcag cgaagaccac 1450 qatqaaqeee caacageeae geecaegaet geeeggaega ggeegaeeae 1500 agacgtgagt gcaggtgaaa atggaggttt cctcctcctg cggctgagtg 1550 tggcttcccc ggaagacctc actgacccca gagtggcaga aaggctgatg 1600 cagcagetee accgggaact ccaegeeeac gegeeteact tecaggtete 1650 cttactgcgt gtcaggagag gctaacggac atcagctgca gccaggcatg 1700 tcccgtatgc caaaagaggg tgctgcccct agcctgggcc cccaccgaca 1750 gactgcagct gcgttactgt gctgagaggt acccagaagg ttcccatgaa 1800 gggcagcatg tocaagcooc taaccocaga tgtggcaaca ggaccotogc 1850 tcacatccac cggagtgtat gtatggggag gggcttcacc tgttcccaga 1900 ggtgtccttg gactcacctt ggcacatgtt ctgtgtttca gtaaagagag 1950 acctgatcac ccatctgtgt gcttccatcc tgcattaaaa ttcactcagt 2000 gtggcccaaa aaaaa 2015

<210> 513

<211> 482

<212> PRT

<213> Homo Sapien

<400> 513

Met Gly Cys Leu Trp Gly Leu Ala Leu Pro Leu Phe Phe Cys
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Trp Glu Val Gly Val Ser Gly Ser Ser Ala Gly Pro Ser Thr Arg 20 25 30

Arg Ala Asp Thr Ala Met Thr Thr Asp Asp Thr Glu Val Pro Ala 35 40 45

Met Thr Leu Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu 50 55 60

Ser Ala Glu Thr Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile
65 70 75

Pro Glu Ala Glu Thr Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg 80 85 90

Glu Thr Arg Ser Phe Thr Lys Thr Ser Pro Asn Phe Met Val Leu 95 100 105

Ile Ala Thr Ser Val Glu Thr Ser Ala Ala Ser Gly Ser Pro Glu 110 115 120

Glu Glu Ala Ile Phe Asp Thr Leu Cys Thr Asp Asp Ser Ser Glu 140 145 150

Glu Ala Lys Thr Leu Thr Met Asp Ile Leu Thr Leu Ala His Thr 155 160 165

Ser Thr Glu Ala Lys Gly Leu Ser Ser Glu Ser Ser Ala Ser Ser 170 175 180

Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg Ala Ser Glu Ser 185 190 195

Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg 200 205 210

Ala Ser Glu Ser Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile 215 220 225

Thr Pro Ser Trp Ser Pro Gly Ser Asp Val Thr Leu Leu Ala Glu 230 235 240

Ala Leu Val Thr Val Thr Asn Ile Glu Val Ile Asn Cys Ser Ile
245 250 255

Thr Glu Ile Glu Thr Thr Ser Ser Ile Pro Gly Ala Ser Asp Ile Asp Leu Ile Pro Thr Glu Gly Val Lys Ala Ser Ser Thr Ser Asp Pro Pro Ala Leu Pro Asp Ser Thr Glu Ala Lys Pro His Ile 290 295 300 Thr Glu Val Thr Ala Ser Ala Glu Thr Leu Ser Thr Ala Gly Thr 305 310 Thr Glu Ser Ala Ala Pro His Ala Thr Val Gly Thr Pro Leu Pro 320 325 330 Thr Asn Ser Ala Thr Glu Arg Glu Val Thr Ala Pro Gly Ala Thr 340 Thr Leu Ser Gly Ala Leu Val Thr Val Ser Arg Asn Pro Leu Glu 350 360 Glu Thr Ser Ala Leu Ser Val Glu Thr Pro Ser Tyr Val Lys Val Ser Gly Ala Ala Pro Val Ser Ile Glu Ala Gly Ser Ala Val Gly Lys Thr Thr Ser Phe Ala Gly Ser Ser Ala Ser Ser Tyr Ser Pro 395 400 405 Ser Glu Ala Ala Leu Lys Asn Phe Thr Pro Ser Glu Thr Pro Thr 415 Met Asp Ile Ala Thr Lys Gly Pro Phe Pro Thr Ser Arg Asp Pro 435 425 430 Leu Pro Ser Val Pro Pro Thr Thr Thr Asn Ser Ser Arg Gly Thr 450 Asn Ser Thr Leu Ala Lys Ile Thr Thr Ser Ala Lys Thr Thr Met 455 Lys Pro Gln Gln Pro Arg Pro Arg Leu Pro Gly Arg Gly Arg Pro

Gln Thr

<210> 514

<211> 2284

<212> DNA

<213> Homo Sapien

<400> 514

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teetteeege gggegegaca gagetgteet egeacetgga tggeageagg 100
ggegeegggg teetetegae geeagagaga aateteatea tetgtgeage 150
ettettaaag caaactaaga ceagagggag gattateett gacetttgaa 200
gaecaaaact aaactgaaat ttaaaatgtt etteggggga gaagggaget 250

tgacttacac tttggtaata atttgcttcc tgacactaag gctgtctgct 300 agtcagaatt gcctcaaaaa gagtctagaa gatgttgtca ttgacatcca 350 gtcatctctt tctaagggaa tcagaggcaa tgagcccgta tatacttcaa 400 ctcaagaaga ctgcattaat tcttgctgtt caacaaaaaa catatcaggg 450 gacaaagcat gtaacttgat gatcttcgac actcgaaaaa cagctagaca 500 acccaactgc tacctatttt tctgtcccaa cgaggaagcc tgtccattga 550 aaccagcaaa aggacttatg agttacagga taattacaga ttttccatct 600 ttgaccagaa atttgccaag ccaagagtta ccccaggaag attctctctt 650 acatggccaa ttttcacaag cagtcactcc cctagcccat catcacacag 700 attattcaaa gcccaccgat atctcatgga gagacacact ttctcagaag 750 tttggatcct cagatcacct ggagaaacta tttaagatgg atgaagcaag 800 tgcccagctc cttgcttata aggaaaaagg ccattctcag agttcacaat 850 tttcctctga tcaagaaata gctcatctgc tgcctgaaaa tgtgagtgcg 900 ctcccagcta cggtggcagt tgcttctcca cataccacct cggctactcc 950 aaagcccgcc accettctac ccaccaatgc ttcagtgaca ccttctggga 1000 cttcccagcc acagctggcc accacagctc cacctgtaac cactgtcact 1050 totcaquete ccacqueect catttetaca qtttttacac gggetgegge 1100 tacactecaa geaatggeta caacageagt tetgactace acettteagg 1150 cacctacqqa ctcqaaaqqc aqcttaqaaa ccataccgtt tacaqaaatc 1200 tccaacttaa ctttgaacac agggaatgtg tataacccta ctgcactttc 1250 tatgtcaaat gtggagtctt ccactatgaa taaaactgct tcctgggaag 1300 gtagggaggc cagtccaggc agttcctccc agggcagtgt tccagaaaat 1350 cagtacqqcc ttccatttqa aaaatqqctt cttatcqqqt ccctqctctt 1400 tggtgtcctg ttcctggtga taggcctcgt cctcctgggt agaatccttt 1450 cggaatcact ccgcaggaaa cgttactcaa gactggatta tttgatcaat 1500 gggatctatg tggacatcta aggatggaac tcggtgtctc ttaattcatt 1550 tagtaaccag aagcccaaat gcaatgagtt tctgctgact tgctagtctt 1600 agcaggaggt tgtattttga agacaggaaa atgccccctt ctgctttcct 1650 tttttttttt ggagacagag tcttgctctg ttgcccaggc tggagtgcag 1700 tagcacgate teggetetea eegcaacete egteteetgg gtteaagega 1750 ttctcctqcc tcaqcctcct aagtatctqq qattacaqqc atgtgccacc 1800 acacctgggt gatttttgta tttttagtag agacggggtt tcaccatgtt 1850

ggtcaggctg gtctcaaact cctgacctag tgatccaccc tcctcggcct 1900 cccaaagtgc tgggattaca ggcatgagcc accacagctg gcccccttct 1950 gttttatgtt tggtttttga gaaggaatga agtgggaacc aaattaggta 2000 attttgggta atctgtctct aaaatattag ctaaaaacaa agctctatgt 2050 aaagtaataa agtataattg ccatataaat ttcaaaattc aactggcttt 2100 tatgcaaaga aacaggttag gacatctagg ttccaattca ttcacattct 2150 tggttccaga taaaatcaac tgtttatatc aatttctaat ggatttgctt 2200 ttcttttat atggattcct ttaaaactta ttccagatgt agttcctcc 2250 aattaaatt ttgaataaat cttttgttac tcaa 2284

<210> 515

<211> 431

<212> PRT

<213> Homo Sapien

<400> 515

Met Phe Phe Gly Gly Glu Gly Ser Leu Thr Tyr Thr Leu Val Ile 1 10 15

Ile Cys Phe Leu Thr Leu Arg Leu Ser Ala Ser Gln Asn Cys Leu 20 25 30

Lys Lys Ser Leu Glu Asp Val Val Ile Asp Ile Gln Ser Ser Leu 35 40 45

Ser Lys Gly Ile Arg Gly Asn Glu Pro Val Tyr Thr Ser Thr Gln 50 55 60

Glu Asp Cys Ile Asn Ser Cys Cys Ser Thr Lys Asn Ile Ser Gly 65 70 75

Asp Lys Ala Cys Asn Leu Met Ile Phe Asp Thr Arg Lys Thr Ala 80 85 90

Arg Gln Pro Asn Cys Tyr Leu Phe Phe Cys Pro Asn Glu Glu Ala 95 100 105

Cys Pro Leu Lys Pro Ala Lys Gly Leu Met Ser Tyr Arg Ile Ile 110 115 120

Thr Asp Phe Pro Ser Leu Thr Arg Asn Leu Pro Ser Gln Glu Leu 125 130 135

Pro Gln Glu Asp Ser Leu Leu His Gly Gln Phe Ser Gln Ala Val  $140 \hspace{1.5cm} 145 \hspace{1.5cm} 150 \hspace{1.5cm}$ 

Thr Pro Leu Ala His His His Thr Asp Tyr Ser Lys Pro Thr Asp 155 160 165

Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys Phe Gly Ser Ser Asp 170 175

His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala Ser Ala Gln Leu 185 190 195

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Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln Phe Ser
Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala
                215
Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser Ala
                230
                                    235
                                                         240
Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr
Pro Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro
Val Thr Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr
Val Phe Thr Arg Ala Ala Ala Thr Leu Gln Ala Met Ala Thr Thr
                                                         300
                290
                                    295
Ala Val Leu Thr Thr Thr Phe Gln Ala Pro Thr Asp Ser Lys Gly
Ser Leu Glu Thr Ile Pro Phe Thr Glu Ile Ser Asn Leu Thr Leu
Asn Thr Gly Asn Val Tyr Asn Pro Thr Ala Leu Ser Met Ser Asn
                                                         345
                335
                                    340
Val Glu Ser Ser Thr Met Asn Lys Thr Ala Ser Trp Glu Gly Arg
                350
Glu Ala Ser Pro Gly Ser Ser Gln Gly Ser Val Pro Glu Asn
                                    370
                                                         375
                365
Gln Tyr Gly Leu Pro Phe Glu Lys Trp Leu Leu Ile Gly Ser Leu
                                                         390
                380
                                    385
Leu Phe Gly Val Leu Phe Leu Val Ile Gly Leu Val Leu Leu Gly
                395
Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg Tyr Ser Arg Leu
                                     415
Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile
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<210> 516

<211> 2749

<212> DNA

<213> Homo Sapien

<220>

<221> unsure

<222> 1869, 1887

<223> unknown base

<400> 516

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gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150 ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200 tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250 agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300 accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtggggt 350 cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400 caggaccetg etgteeteec teccettete ceacetteea geetetgget 450 acaacacgcc tgcagcccaa ggcaaaagct cagcaaaccc agcccccagg 500 attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550 agacaggggc tgaggcccct ccattgccag ggacttccca gtacgggcac 600 gaaaggactt ctcagtacac aggaacctct cctcacccag cgacctctcc 650 tectgeaggg agetecegee ecceeatgea getggaetee aceteageag 700 aggacaccag tecagetete ageagtggea getetaagee cagggtgtee 750 atcccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800 gtcagccgca ggcctgatcg ccttctgcag ccacctgctc ctgtggagaa 850 aggaagetea acaggeeacg gagacacaga ggaacgagaa gttetggete 900 tcacgcttga ctgcggagga aaaggaagcc ccttcccagg cccctgaggg 950 ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000 cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100 cacctcagcc tcagagtcca gctgcccgga ctccagggct ctccccaccc 1150 tccccaggct ctcctcttgc atgttccagc ctgacctaga agcgtttgtc 1200 agccctggag cccagagcgg tggccttgct cttccggctg gagactggga 1250 catecetgat aggtteacat ecetgggeag agtaceagge tgetgaeeet 1300 cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350 aggaactect gggeeteatg eccagtgteg gaccetgeet teeteecact 1400 ccagacccca cettgtette cetecetgge gteeteagae ttagteecae 1450 ggtctcctgc atcagctggt gatgaagagg agcatgctgg ggtgagactg 1500 ggattctggc ttctctttga accacctgca tccagccctt caggaagcct 1550 gtgaaaaacg tgattcctgg ccccaccaag acccaccaaa accatctctg 1600 ggcttggtgc aggactctga attctaacaa tgcccagtga ctgtcgcact 1650 tgagtttgag ggccagtggg cctgatgaac gctcacaccc cttcagctta 1700 gagtctgcat ttgggctgtg acgtctccac ctgccccaat agatctgctc 1750 tgtctgcgac accagatcca cgtggggact cccctgaggc ctgctaagtc 1800 caggeettqq teagqteaqq tqcacattqc aggataagcc caggaceggc 1850 acagaagtgg ttgcctttnc catttgccct ccctggncca tgccttcttg 1900 cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950 gggttacttg cctatgggtt ctggtggcta gagagaaaag tagaaaacca 2000 gagtgcacgt aggtgtctaa cacagaggag agtaggaaca gggcggatac 2050 ctgaaggtga ctccgagtcc agcccctgg agaaggggtc gggggtggtg 2100 gtaaagtagc acaactacta tttttttct ttttccatta ttattgtttt 2150 ttaagacaga atctcgtgct gctgcccagg ctggagtgca gtggcacgat 2200 ctgcaaactc cgcctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250 gagtagetgg gattacagge acgeaceace acacetgget aatttttgta 2300 cttttagtag agatggggtt tcaccatgtt ggccaggctg gtcttgaact 2350 cctgacctca aatgagcctc ctgcttcagt ctcccaaatt gccgggatta 2400 caggcatgag ccactgtgtc tggccctatt tcctttaaaa agtgaaatta 2450 gaagaaaaaa atgtcaccca tagtctcacc agagactatc attatttcgt 2550 tttgttgtac ttccttccac tcttttcttc ttcacataat ttgccggtgt 2600 tctttttaca gagcaattat cttgtatata caactttgta tcctgccttt 2650 tecacettat egitecatea etitatteca geaettetet gigittiaca 2700 gaccttttta taaataaaat gttcatcagc tgcataaaaa aaaaaaaaa 2749

<210> 517

<211> 332

<212> PRT

<213> Homo Sapien

<400> 517

Met Arg Leu Leu Val Leu Leu Trp Gly Cys Leu Leu Pro Gly

Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly

Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg

Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Gly Gln Glu Thr Met 75

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Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu
Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr
Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile
                                    115
Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser
                125
Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala
Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
                155
Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu
                170
Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr
Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro
Ala Gly Ser Ser Arg Pro Pro Met Gln Leu Asp Ser Thr Ser Ala
                215
                                    220
Glu Asp Thr Ser Pro Ala Leu Ser Ser Gly Ser Ser Lys Pro Arg
                230
Val Ser Ile Pro Met Val Arg Ile Leu Ala Pro Val Leu Val Leu
                                    250
Leu Ser Leu Leu Ser Ala Ala Gly Leu Ile Ala Phe Cys Ser His
Leu Leu Trp Arg Lys Glu Ala Gln Gln Ala Thr Glu Thr Gln
Arg Asn Glu Lys Phe Trp Leu Ser Arg Leu Thr Ala Glu Glu Lys
Glu Ala Pro Ser Gln Ala Pro Glu Gly Asp Val Ile Ser Met Pro
                                     310
Pro Leu His Thr Ser Glu Glu Glu Leu Gly Phe Ser Lys Phe Val
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Ser Ala

<sup>&</sup>lt;210> 518

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

<sup>&</sup>lt;400> 518

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<210> 519
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 519
 ctgtcttccc ctgcttggct gtgg 24
<210> 520
<211> 47
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
ggtgcaggaa gggtgggatc ctcttctctc gctgctctgg ccacatc 47
<210> 521
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 521
ccagtgcaca gcaggcaacg aagc 24
<210> 522
<211> 24
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 522
actaggetgt atgeetgggt ggge 24
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<212> DNA
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<223> Synthetic oligonucleotide probe
<400> 523
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<210> 524
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
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<223> Synthetic oligonucleotide probe
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<223> Synthetic oligonucleotide probe
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<210> 527
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<400> 527
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<213> Artificial Sequence
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<400> 529
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<210> 530
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<213> Artificial Sequence
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<400> 530
cgggtccctg ctctttgg 18
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<212> DNA
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caccgtagct gggagcgcac tcac 24
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<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 532
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